The Fire Experience in Home Day Care Occupancies

EXECUTIVE DEVELOPMENT

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Abstract

The National Fire Incident Reporting System (NFIRS) is incapable of supplying information pertaining to home day care occupancies. Analysis of the fire experience in these occupancies has therefore suffered. This research examined the importance of home day care fire data and why such data are not provided by the NFIRS. Alternative means of quantifying this fire experience were examined. Model code requirements for day care homes were compared. Illinois' experience with home day care regulation was specifically examined. Historical and descriptive research methods were used. The fire and child care licensing agencies of each state were surveyed relative to regulation of day care homes and availability of incident data.

The research questions addressed were:

1. What is the importance of quantifying the fire experience in home day care occupancies?
2. Why does the NFIRS not provide data relative to home day care occupancies?
3. What is the prescribed method to influence modification of the NFIRS?
4. Are there alternative databases that quantity the fire experience in day care homes?
5. How do home day care fire safety regulations compare state-by-state?
6. How do model code criteria applicable to day care homes compare and how are they justified?

The results identified benefits of quantifying the fire experience in day care homes. NFIRS property classifications were found to be based upon an antiquated standard that will be updated in a new version of the NFIRS. No comprehensive alternative database to quantify the fire experience in day care homes was identified. State regulatory criteria for day care homes varied when compared. Model codes varied in their classification of and criteria for day care homes. A lack of adequate justification for code requirements was identified. When available, per capita data indicated infrequent fire incidents in day care homes compared to residential occupancies.

Resulting recommendations favored (a) early state adoption of the updated NFIRS, (b) improving communications between fire authorities and child care agencies, (c) developing performance-based home day care code criteria, (d) relating model code requirements to quantifiable data, (e) discontinuing the application of educational and institutional code requirements to day care homes, and (f) allowing child care agency representatives to conduct fire inspections in day care homes.

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Introduction

As the result of several social changes, home-based child care has proliferated in recent years throughout Illinois and the United States. A related problem, however, is that the fire service does not have a comprehensive or accurate system for tracking fire incident data in home day care occupancies. The National Fire Incident Reporting System (NFIRS) is not capable of supplying information relative to home day care occupancies because fixed property use codes developed for data entry into the NFIRS are not available for this occupancy classification.

The fire service, on a national, state, and local level, is therefore unable to benefit from statistical analysis of a home day care fire database. Consequently, anticipation of fire frequency and the tailoring of public education programs for day care homes suffer. In addition, fire authorities may be challenged when adopting and enforcing model building and fire prevention codes that contain stringent criteria for home day care occupancies. In the absence of quantifiable fire data, justification of code requirements for day care homes more stringent than those applicable to single-family dwellings becomes controversial.

This was evident beginning in 1993 in Illinois when the Office of the State Fire Marshal (OSFM) attempted to adopt the Life Safety Code (LSC) published by the National Fire Protection Association (NFPA). The LSC imposes fire safety requirements in day care homes that are more stringent than those applicable to single-family dwellings. Home day care operators, and specifically the two organizations representing Illinois home day care owners, waged a lobbying effort with the Illinois legislature that forced modifications to the LSC before it could be adopted into Illinois' administrative rules. The OSFM was essentially prevented from adopting the LSC until modifications were made to render criteria pertaining to home day care occupancies less stringent.

A recognized deficiency in OSFM arguments for adoption of the LSC was the absence of statistical information to indicate any fire problems in home day care occupancies. This occurred despite the fact that the OSFM collects fire incident information from hundreds of Illinois fire departments that participate in the Illinois Fire Incident Reporting System (IFIRS), as a subset of the NFIRS.

It is the purpose of this research to identify why a need exists for the NFIRS to recognize home day care occupancies as a fixed property use classification. Additional purposes of the research include examining why the NFIRS currently cannot identify home day care incidents and discovering the prescribed method for influencing the United States Fire Administration (USFA) to solve the problem by making necessary modifications to the NFIRS.

It is also the purpose to identify any existing alternative methods, outside of the NFIRS database, for

quantifying the magnitude of the nation's fire problem in day care homes. Lastly, it is the purpose to compare the content of, and justification for, state regulations as well as model building and fire prevention code criteria, applicable to home day care occupancies. Specifically, if state regulations or model code requirements pertaining to home day care occupancies are more stringent than those applied to single-family residences, how is this justified?

Examination of these issues will be accomplished through historical and descriptive research methodologies. How day care occupancies are addressed within the NFIRS will be examined. Requirements pertaining to day care homes in the model building and fire prevention codes will be studied. Also, a survey instrument will be mailed to both the fire authority and the child care licensing agency of each state in an effort to determine the extent of home day care fire safety regulations and fire incident databases available on a state basis.

The specific research questions to be answered are:

1. What is the importance of quantifying the fire experience in home day care occupancies?
2. Why does the NFIRS not provide data relative to home day care occupancies?
3. What is the prescribed method to influence modification of the NFIRS?
4. Are there alternative databases that quantity the fire experience in day care homes?
5. How do home day care fire safety regulations compare state-by-state?
6. How do model code criteria applicable to day care homes compare and how are they justified?

Background and Significance

In 1993 the Illinois OSFM attempted to adopt the 1991 edition of the NFPA's Standard #101 Code for Safety to Life from Fire in Buildings and Structures, commonly known as the Life Safety Code (LSC). Adoption into the Illinois Administrative Code (IAC) would have made the requirements of the LSC applicable on a statewide basis to a variety of occupancies, including home day care occupancies (J. Ahern, personal interview, April 14, 1998).

The Illinois Department of Children and Family Services (DCFS) maintained licensing jurisdiction over Illinois day care facilities, including day care homes and group day care homes. DCFS's licensing rules, although specifying some basic safety criteria for home day care facilities, essentially insured fire safety by requiring an on-site inspection and fire clearance from either the OSFM or the local fire department (Illinois Administrative Code, 1992a). DCFS's administrative rules for day care licensing purposes had been modified in 1992 to allow up to 16 children to be cared for in a group day care home (Illinois Administrative Code, 1992b). The Illinois legislature's

amendment of the Illinois Child Care Act prompted this change. The Child Care Act serves as the enabling legislation in Illinois that empowers DCFS to promulgate administrative licensing rules (Illinois Child Care Act, 1969). The legislature made the modification in the Child Care Act in reaction to strong outcry from concerned Illinois child care providers and other special interest groups. These groups argued that the unavailability of day care was stifling state efforts to reduce unemployment amongst Illinois parents. Therefore, with the elected legislature amending the Act to allow up to 16 children to be cared for in a home day care environment, DCFS had no choice but to similarly amend their licensing rules (J. Ahern, personal interview, April 14, 1998).

Conflicts became apparent between DCFS's licensing rule classifications for day care homes and the classifications found in the LSC proposed for adoption by the OSFM. In accordance with DCFS licensing rules, a maximum of 16 children could be cared for in a group home day care occupancy (Illinois Administrative Code, 1992b). The LSC, although not prohibiting occupancy of a home by any number of children for day care purposes, did classify day care facilities serving more than 12 clients as day care centers (NFPA, 1991). This meant that day care facilities that would serve from 13 to 16 clients, although allowed to operate under DCFS licensing rules as home day care occupancies, would be subject to more stringent day care center rules under LSC fire safety standards.

The requirements of the 1991 LSC for a day care center are dramatically more demanding than requirements applicable to a day care home. Day care centers are subject to height and construction restrictions that prohibit the use of certain types of unprotected wood frame buildings. Furthermore, the LSC requires automatic fire sprinkler protection in some types of construction depending upon the levels of the building occupied by the day care center. The LSC's day care center regulations also require emergency lighting, exit marking signs, a complete fire alarm system, fire-rated exit corridor protection, self-closing room doors, and fire rated separation of storage areas. The LSC does not require any of these fire protection features in a day care home occupancy (NFPA, 1991).

Differences in how DCFS licensing rules and the LSC sub-classified day care facilities lead to an outcry from the regulated community of home day care owners. Those owners, who had been lead to believe by DCFS that they would be allowed to care for up to 16 children in their home environment, were shocked when they learned that the more stringent day care center fire safety requirements of the OSFM would apply if more than 12 children were present. Faced with the possible expense of installing sprinkler and fire alarm systems, emergency lighting, exit signs, and all of the other equipment required by the LSC for a day care center, operators were quick to protest the

LSC adoption by the OSFM. Members of the Illinois legislature were also concerned when it was realized that the OSFM's proposed adoption of the LSC would essentially make it unrealistic for home day care owners to increase their client numbers above 12 (J. Ahern, personal interview, April 14, 1998).

At the time, two groups represented Illinois home day care occupancy owners - the Illinois State Home Day Care Association (ISHDCA) and the Illinois Child Care Voice (ICCV). Both of these organizations quickly began campaigns to challenge the OSFM's adoption and enforcement of the LSC. The outcry from the home day care community prompted the Illinois legislature to pass a resolution forming the Day Care and Life Safety Task Force (S.R. 156, 1993). The resolution named the director of the Illinois Department of Labor as chair of the task force. The stated purpose of the task force was "to study the regulations and standardization of life safety standards in home day care so as to allow home day care to expand and flourish while maintaining high levels of safety" (S.R. 156, 1993, p.1). The resolution specified that the task force would include representatives of the OSFM, DCFS, the Illinois Department of Commerce and Community Affairs (DCCA), ISHDCA, ICCV, and the Illinois Child Care Association. (The author of this paper represented the OSFM on the Task Force).

The Day Care and Life Safety Task Force considered the dilemma presented by the differences between DCFS day care licensing standards and OSFM fire safety regulations. The Task Force considered testimony and correspondence from several interested parties. A point of view repeatedly expressed to the Task Force was that LSC criteria applicable to day care homes were not based upon any quantitative data (personal experience of the author). Specifically, home day care owners and their representative organizations argued that the LSC designation of 12 clients as the cut-off line between a day care home and a day care center was not based upon any scientific, statistical, or other objective basis. Furthermore, arguments were presented to indicate that even for those homes that served 12 or less clients, and could be classified within the day care home categories of the LSC, that the Code's requirements limiting the use of basements, and basement window escape routes, were overbearing, and without quantitative support. In a letter to Illinois Governor Jim Edgar, Ms. Margaret Tiffen, an owner of an Illinois home day care occupancy, wrote:

> I would like to point out that the regulations found in the Life Safety Code are not as scientific and indisputable as some people would have us believe. For example, I contend that most basement windows are easier and safer to use as a means of escape than a second story window. But the Code shows more tolerance for second story occupancy than it does for basement occupancy. I believe

> that this difference in the Code's restrictions is more of a reflection of the author's unfavorable images of basements than it is a reflection of an unbiased measurement of safety issues.
> (M. Tiffen, personal correspondence, February 3, 1995, p.2)

In an effort to justify the requirements of the LSC, and argue its case to the Task Force, the OSFM examined several issues relative to home day care fire safety. Most relevant to this effort was examination of statistics from the IFIRS database. The OSFM is the designated Illinois agency responsible for the collection of fire incident data in accordance with the NFIRS program. Over 70% of all Illinois fire departments and fire protection districts report fire incident activity to the OSFM through the Illinois version of the NFIRS, formally known as the IFIRS (K. Johnson, personal correspondence, May 22, 1998). The IFIRS database is a useful tool in determining the direction and scope of fire prevention enforcement programs and code development. Analysis of Illinois and national databases allows identification of fire trends on local, county, state, and national levels. Resulting information can serve as a quantitative benchmark for the effectiveness of fire prevention codes and enforcement programs.

Results of the search for home day care occupancy fire statistics was disappointing. Neither the NFIRS, nor the NFIRS-based IFIRS, designated a fixed property use code for a home day care occupancy. Although the system recognized over 600 fixed property use codes, including day care centers, it did not allow specific identification of a day care home occupancy (FEMA, 1989). Home day care occupancy fire incident data could not be entered into the system without the existence of a specific fixed property use code. Obviously, this resulted in no information available for analysis to help in determining the magnitude or types of fire problems experienced in home day care occupancies.

During the Task Force investigation, a legislative assistant queried the OSFM relative to fire loss statistics particular to home day care occupancies. Considering the above information, --that the system did not accommodate data entry pertaining to home day care occupancies -- the obvious reply from the OSFM should have taken the form of an explanation of the inadequacy of the system to provide this information. Unfortunately, what was issued was a commonly used form letter used to report NFIRS search results (J. Ahern, personal interview, April 23, 1998). The correspondence indicated that "0 fires, 0 fire deaths, and 0 property loss had been experienced in Illinois home day care occupancies during the past 19 years that Illinois fire statistics had been collected" (B. Petrilli, personal correspondence, October 23, 1993, p.1).

That one piece of correspondence, on OSFM letterhead, spoke volumes to Illinois home day care owners and legislators. Copies of the letter were presented not only at the Day Care and Life Safety Task Force but also appeared attached to letters addressed to the OSFM from infuriated legislators demanding explanation (J. Ahern, personal interview, May 13, 1998). The OSFM found itself attempting to defend LSC requirements at public hearings, in response to questions from to state and local politicians, and at meetings with local fire chiefs who were attempting to defend LSC home day care inspections within their jurisdictions. Although the correspondence indicating zero fires in home day care occupancies would have been recognized as a clerical mistake to someone who understood the NFIRS process, [including the unavailability of a fixed property use code for a home day care occupancy], the damage had been done.

Home day care owner Margaret Tiffen referenced the absence of statistics within her correspondence to Illinois legislators and the Governor's Office in 1995 when she wrote:

> I point out that the information that is needed to do an impartial analysis of the safety of home day care does not even exist! State Fire Marshal Thomas Armstead admitted that he could not relate any statistics for the occurrence of fire in home day care. He admitted that the State of Illinois has never made a distinction in its reports between a day care home and any other residence. (M. Tiffen, personal correspondence, February 3, 1995, p.3)

Ms. Karen Boyden served as president of ISHDCA during this controversial period. Writing on behalf of the ISHDCA and the ICCV, she called for a legislative resolution to have DCFS licensing criteria no longer recognize the fire safety rules of the OSFM. Specifically, Ms. Boyden wrote:

> The Office of the State Fire Marshal has stated that for the past nineteen years, there are no records to show any injuries or deaths to children that are fire related in a licensed home day care facility. To insure a consistency with law, it is not recommended that the Department of Children and Family Services adopt rules of the Office of the State Fire Marshal. (K. Boyden, personal correspondence, November 17, 1993, p.2)

Disappointed by the lack of quantifiable fire data from the IFIRS and NFIRS, the OSFM attempted to justify the home day care criteria of the LSC by comparison to other nationally recognized model building and fire prevention codes. This effort proved frustrating when comparisons indicated a wide disparity between model code classifications and prescriptive criteria pertaining to residential day care occupancies (personal experience of the

author).

The report of the Task Force to the Illinois Senate did not definitively denounce the OSFM's adoption of the LSC (Illinois Department of Labor, 1994). However, as a result of the controversy, the OSFM was forced by the Illinois legislature's Joint Committee on Administrative Rules (JCAR) to modify the adoption of the LSC for enforcement in Illinois. Essentially, the forced changes required the OSFM to disregard the LSC's sub-classification of day care facilities and accept in its place, the criteria described in Illinois DCFS licensing standards. The modified version of the LSC that was adopted into Illinois' fire prevention code allows day care homes serving up to 16 children to meet home day care criteria. Day care center criteria are not effective until a facility serves more than 16 clients. Also, the changes forced by JCAR before the LSC adoption could be finalized, included an OSFM concession that day care home staff-to-client ratios defined within the LSC would not be applicable. Rather, the ratios defined within DCFS licensing standards would be required. This allowed for less stringent staffing requirements to apply to home day care occupancies (Illinois Administrative Code, 1993).

Changes to LSC criteria, as adopted into the Illinois administrative code, resulted in home day care occupancies being allowed to care for more children, and to provide fewer staff, than prescribed by the LSC. Furthermore, DCFS made simultaneous modifications to their day care home licensing rules specifying that an OSFM inspection was only mandatory for a group day care home serving more than 12 clients. Smaller, family day care homes, that comprise the great majority of Illinois' home day care occupancies, would be subject to a fire safety inspection conducted by a DCFS licensing representative. This resulted in the OSFM inspecting less than 2% of all Illinois home day care occupancies (Illinois Administrative Code, 1992b).

At the present time, Illinois home day care occupancies continue to be regulated by DCFS and OSFM fire safety rules that are less stringent than those prescribed by the LSC. Also, there continues to be no method of identifying a home day care occupancy within the IFIRS or the NFIRS. Many in the fire service are anxious about the potential for fire tragedy in a home day care occupancy allowed to care for up to 16 children in a structure designed for single-family occupancy. Therefore, the identified problem for this research is that the absence of a quantitative fire database combined with a lack of consistency in model code requirements, leaves the fire service at a disadvantage when attempting to justify more stringent code requirements for home day care occupancies. The fire service needs to be able to determine and defend fire safety criteria for home day care occupancies on other than gut feeling.

This research is being conducted as a required component of the Executive Development (ED) class in the National Fire Academy's Executive Fire Officer Program (EFOP). The issues being studied are related to several concepts from the class. Problem solving techniques addressed in the ED class are relevant because the Illinois OSFM is faced with a problem in defending the requirements of the LSC applicable to home day care occupancies. Marketing in the public sector is a related issue because the OSFM is attempting to use feedback information from a data collection system to assist in determining inspection priorities and code application, while also attempting to take into account the safety and needs of the home day care community.

The issues and subsequently the research also relate to the concepts of outside perspectives and service qualities. If the OSFM had a reliable method of identifying the magnitude of the fire problem in home day care occupancies, the agency would be better able to tailor code requirements, inspection priorities, and prevention programs relative to those occupancies. Finally, public perception issues apply. The agency's image and reputation would be enhanced if home day care owners and their representative organizations believed that there was quantifiable and definitive reasoning behind the OSFM requiring home day care occupancies to comply with more stringent fire prevention criteria than that applied to single-family residences.

Literature Review

The Proliferation of Home Day Care

Boschee and Jacobs (1997) wrote that family structure, and the role of women within the family, had changed significantly over the last two decades. They found that over one half of the mothers who had preschool children were employed outside the home. A nearly equal number of mothers of preschoolers were single parents. More and more parents were finding a need to turn to non-family members to help care for their children while they were employed.

In 1994 Modigliani wrote that the number of parents of preschool-aged children who work outside the home was three times as many as 30 years ago. The most rapid increase within this group was working mothers of children younger than three. Howkins (1993) separately concluded that nearly 60% of women with children under the age of six were in the work force. This included half of the women with a baby under age one. Howkins stated that even more women would be in the work force if affordable, high-quality child care were available.

Most nationwide data indicated between 16% and 18% of child care was provided in licensed home day care occupancies (Haddock, 1996). In support of this statistic, Haddock noted that in 1995, the National Household

Education Survey indicated that nationwide, licensed home-based providers cared for 18% of the 12.9 million infants and toddlers who were enrolled in some form of licensed day care. Haddock further noted that local day care providers, regulators, and other experts estimated that there were at least as many people watching children without licenses - if not more. Squibb (1986) supported the argument that many day care homes are unlicensed when she wrote that some surveys indicate as many as 70% of children in day care are in family day care home settings.

The increased demand on a national basis for home-based child care has also been evident in Illinois. As Table 1 indicates, figures from the Illinois DCFS indicate a steady increase in the number of licensed day care homes in recent years. From 1992 through 1997, there was an increase of 27.8% in the number of licensed Illinois home day care occupancies. During the same period, licensed home day care capacity increased by 31.6%. At the end of 1997, home day care occupancies represented 30.4% of the capacity of all licensed Illinois day care facilities. Although the total number of day care homes in Illinois remained relatively the same between 1996 and 1997, the number of clients served in day care homes continued to increase (Illinois DCFS, 1998).

Table 1

Licensed Illinois Day Care Homes

Year	Homes	Capacity	Total day care capacity
1997	10,075	73,146	240,443
1996	10,151	72,356	237,997
1995	9,738	68,386	226,688
1994	8,578	59,575	200,803
1993	8,196	55,983	190,975
1992	7,880	55,562	187,625

Note. Figures are based on fiscal years, beginning July 1. Homes include licensed day care homes and group day care homes. Capacity = home day care capacity. Total day care capacity = capacity of all licensed day care homes and day care centers.

Haddock (1996) identified that home-based child care is attractive to parents for several reasons. More

working parents are looking for care that closely resembles their own child-rearing styles and home environments, qualities that are difficult to find in commercial day care centers. Parents can also find lower costs and schedules that are more flexible with home providers. Home providers often do not charge parents for picking up their children late, do not require more money for extracurricular activities and field trips or demand registration fees to hold spots open during the summer.

Squibb noted similar parental preferences for home-based child care services when she wrote:

> It is clear, that home-based child care provides many advantages to all that are involved – the child, the parent and the provider. Parents as well as children often find their needs best served by the family day care home. For one thing, such care is usually provided by persons who live in the community where parents live or work. If the parent's work schedule changes, the hours of child care can change more easily than they might in an institutional setting. Parents and the provider can develop a strong, stable relationship as joint caregivers for the child. The relaxed atmosphere of the home encourages this relationship to be personal as well as professional, and makes it easier for them to work together in dealing with individual child care situations. (1986, p. 2)

Howkins (1993) concluded that the United States lags behind most other industrialized countries in addressing child care needs. She also noted that although there are presently 90,000 licensed child care centers and 500,000 to 800,000 family day care homes in the United States, the number of infants, toddlers, preschool, and school-age children requiring care vastly exceeds the number of openings in most communities. Support for this argument was found in a 1990 poll that indicated over 50% of working mothers are unable to find satisfactory child care while they are on the job (Ford Foundation Letter, 1990). Squibb (1986) noted that because parents prefer family day care, especially for their younger children, we can expect to see an increasing demand for years to come.

Howkins (1993) also recognized that the necessity for day care services is expected to increase in the future. Several factors influence this, including the growing need of families for two incomes, a divorce rate exceeding 50%, and the steep rise in the number of single-parent households headed by women as an increasing number of mothers seek jobs outside their homes. In addition, Howkins noted that the need for day care services will be further accelerated as states begin to implement the Family Support Act that requires mothers of young children to obtain training and employment as a condition of receiving public assistance. By the year 2000 experts predict that four out of five American infants and school-age children will have working mothers, making non-parental

child care during working hours a necessity for the majority of American families.

Licensing, Regulation, and Accreditation of Home Day Care Occupancies

There are no mandatory national standards for operation of a home day care occupancy. Gormley (1997) found that child care regulation in the United States is largely, though not entirely, a state government responsibility. His research indicated that in 49 states, inspectors enforce standards in family day care homes that care for relatively small numbers of children in a private home. Gormley also recognized that child care regulation presents unusual challenges to government regulators when he wrote:

> If regulatory enforcement is too weak, defenseless children may be placed in harms way; if regulatory enforcement is too strong, day care centers may disappear, forcing parents to rely more on untrained relatives and unregulated family day care homes. Formal sanctions present special difficulties. If they are seldom invoked, child care providers may regard regulatory agencies as paper tigers; if they are frequently invoked, child care inspectors may find themselves devoting a disproportionate amount of time to legal paperwork. (1997, p. 293)

Gormley further noted that against this backdrop, states have made different choices. Additionally, legal, political, and administrative context varies from state to state. Gormley's interviews with state inspectors suggested that enforcement varies as well.

Squibb (1986) noted that because family day care is considered to be such an important factor in the welfare of our children, it is regulated by law in almost all states. She also noted that most people are surprised to learn that a license is required for conducting a home business involving the supervision of young children. Addressing why regulations for licensing and registration of family day care homes exist, Squibb wrote:

> Someone who cares for children unrelated to her in her home is, in fact, providing a public service. This public service, like any other, is subject to state regulation, which aims to assure that a service meets certain basic standards. The minimum requirements formulated by the agency that regulates family day care in your state are intended to (a) prevent health and safety hazards from existing in day care homes; and (b) make sure that children in day care homes are not harmed physically or emotionally, so that they have a chance to grow and develop in a healthy way. (1986, p. 2)

Municipal home day care regulation has often concentrated on other than fire safety issues. MacIssac

(1992) wrote:

> Where local governments have implemented regulatory measures on home occupation day care facilities, their efforts have been directed toward more traditional zoning and other related issues. Attention has been given to such items as: parking, noise related nuisance control, and fencing of play areas. (p. 7)

Most literature devoted to the subject of starting or operating a home-based day care facility contains only cursory information relative to the specific subject of fire safety. For example, in the 1994 publication How to Own and Operate a Home Based Day Care Business, Steelsmith's only mention of fire safety considerations was to suggest keeping doors unlocked in the interest of rapid escape rather than locked in the interest of security. Similarly, in How to Start a Quality Childcare Business in Your Home, Carlson (1995) made no mention of fire safety concerns in the section of the book entitled "Basic Considerations about Your Home for Childcare". She did note that most states require a ratio of not more than four infants to one care giver, but did not address physical features of the home. Concerning regulation in general, Carlson did note that "If the regulation of child care programs across this country is consistent in any aspect, it is only that regulations differ dramatically from state to state" (1995, p. 32).

Cadden (1995) noted that although all the states impose health and safety standards on child care centers, not all regulate family child care safety arrangements, even though, in her estimation, six million children attend home day care. In the same article, Cadden noted that even when states regulate home child care settings, dangerous conditions may exist. For example, Cadden found that:

> The state of Idaho permits one person to care for a dozen children, even if they are all infants! Child care advocates and concerned citizens worry that this policy could lead to tragedy. National experts agree that one person could not carry more than three babies to safety in case of a fire. (1995, p. 26)

Several national organizations do exist for purposes of promoting quality child care. Among these, the National Association for Family Child Care (NAFCC) offers voluntary accreditation for home day care operators (Steelsmith, 1994). The purpose of NAFCC accreditation is to give professional recognition and an opportunity to heighten parents' awareness of the high quality of the provider's child care. The program allows accreditation only after a facility has provided family child care for eighteen months and is duly licensed or registered by a state

authority. The process involves self-evaluation and then outside review as well as observation and evaluation by a child care professional and an independent rater. Because state licensing or registration is a prerequisite for NAFCC accreditation, the organization strongly supports state regulatory programs across the country (Steelsmith, 1994).

Another organization, the National Resource Center for Health and Safety in Childcare (NRCHSC) serves as a clearinghouse for child care safety information. The NRCHSC publication, National Health and Safety Performance Standards – Guidelines for Out-of-Home Child Care Programs, although not enforceable as law, serves as a recognized standard within the day care community. The guidelines are an effective compilation of the most commonly encountered methods of ensuring child protection in a child care facility. The organization prescribes safety standards for both day care centers and day care homes (National Resource Center, 1998).

Criteria of the NRCHSC standards pertaining to fire safety issues, and applicable to day care homes, include (a) limiting the location of care for infants and toddlers in wood constructed buildings to the ground floor; (b) limiting the use of basements for children under the age of two regardless of the type of building construction; (c) requiring a minimum of two exits, at different sides of the building or home leading to an open space at ground level; (d) requiring a direct exit from a basement used for child care; (e) prohibiting locks or fastening devices that prevent free escape from the interior of any building; (f) requiring all door hardware in areas used by school-age children to be within reach of the children; (g) allowing passage through another room to reach an exit only if the other room does not have a fixed partition or a door that can be latched; (h) prohibiting the use of portable, open-flame, and kerosene space heaters as well as portable gas stoves used as space heaters; (i) requiring electric space heaters to be Underwriter's Laboratories approved, inaccessible to children, stable with a protective cover, and placed at least 3 feet from curtains, papers and furniture; (j) providing child resistant covers for all electrical outlets accessible to children; (k) requiring the installation of smoke detectors on each floor, no more than 40 feet apart, installed 6 to 12 inches below the ceiling; (l) requiring the presence of fire extinguishers of the A-B-C type; and (m) conducting monthly fire exit drills at day care homes.

Residential Fires and Their Effect on Children

By definition, day care homes are located in residential occupancies and predominantly in single- and two-family dwellings. Because the NFIRS is unable to distinguish home-based child care occupancies from the residential settings in which they are found, there is a tendency by some to correlate the known fire experience in all residential occupancies with the anticipated fire experience in home day care occupancies. Residential occupancies

have historically been the location of the majority of the fire deaths and fire injuries in the United States. Although there is no evidence to support a theory that the fire experience in home day care occupancies is as frequent or deadly as that in all residential occupancies, the possibility of a correlation is at the root of the fire service's concern over regulation of home day care.

According to the Injury Fact Sheet of the National Safe Kids Campaign (NSKC) (1997), each year United States fire departments respond to nearly half a million residential fires, or one every 74 seconds. The NSKC report further notes that residential fires cause 80% of all fire-related deaths and nearly 75% of all injuries. Residential fires are the second leading cause of injury deaths among children aged 1-9 years.

In Fire in the United States, 1985-1994, the USFA noted that "the public does not appreciate the magnitude of the fire problem in the home or the importance of doing its share to reduce fires in the home" (FEMA, 1997b, p. 3). The vast majority of civilian fire deaths (71%) and injuries (68%) continue to occur in residences, although only 22% of the fires are in residences. In addition, residential fires account for a substantial portion of dollar loss (44%). The report specifically highlights the fire problem in one- and two-family occupancies by stating:

> One- and two-family dwellings, where the majority of people in the United States live, dominate the fire problem.…People continue to underestimate the fire problem potential in their home because large fires in hotels, high-rise office buildings, and other public buildings receive higher media attention than fires in the family home. (FEMA, 1997b, p. 4)

Fire continues to take a disproportionately high toll on the young. Each year, approximately 750 children ages 14 and under die from fires and burns in the home. Of these children, two thirds are ages 4 and under. Each year, nearly 47,000 children ages 14 and under are injured in residential fires. Nearly 55% of these children are ages four and under (NSKC, 1997).

More than half of children ages five and under who die from home fires are asleep at the time. Another one third of these children are too young to react appropriately. Children ages five and under represent just 9% of the U.S. population. However, nearly 22% of all fire-related deaths in the home involve this age. Children aged five and under are more than twice as likely to die in a fire than the rest of the population (NSKC, 1997).

The problem of children playing with fire is obviously a concern to the home day care industry. Each year, children playing with fire causes more than 20,000 residential fires, resulting in nearly 300 deaths and more than 2,300 injuries. Playing with fire is the leading cause of residential fire-related deaths among children ages five and

under, accounting for more than one third of all fatalities in this age group (NSKC, 1997).

The USFA National Fire Data Center report Socioeconomic Factors and the Incidence of Fire identified that having more young children in households increases the risk of children playing with fire and that the presence of more children may also increase the risk of other types of fires by distracting adults. Not surprisingly, the relationship between percent of population under age five and children playing fire rates is positive. The report concluded that increases in the proportion of the population under age five means higher rates of children playing fires. In short, the report stated, the more children, the more children playing fires (FEMA, 1997c). Research from New South Wales (as cited in FEMA, 1997c) confirmed that the presence of young children was linked to higher fire rates. In addition, the FEMA report noted that Jennings (as cited in FEMA, 1997c) had also found that increases in the percent of the population under 17 were positively associated with higher fire rates.

Fires and burns are the third leading cause of unintentional injury-related deaths among children ages 14 and under. Children, especially those ages 5 and under, are at the greatest risk from home fire-related death and injury. The danger of fire to children in this age group can, at least partially, be attributed to (a) a less acute perception of danger, (b) less control of their environment, and (c) a limited ability to react promptly and properly to a fire. Also, younger children have faster metabolic rates and their bodies are less capable of handling toxic combustion products, thereby placing them at greater risk of suffering injury or death due to asphyxiation caused by fire (NSKC, 1997).

Identifying Fire Problems Through the National Fire Incident Reporting System

The NFIRS is an information system initiated and supported by the USFA. According to the USFA's parent-organization, the Federal Emergency Management Agency (FEMA), the USFA developed the NFIRS as a means of assessing the nature and scope of the fire problem in the United States. The system first came on line in 1976, and since then it has grown in participation and use (FEMA, 1997d).

The NFIRS was designed as a tool for fire departments to report and maintain computerized records of fires and other fire department activities in a uniform manner. A series of basic phrases with code numbers are used to describe incidents in the system. This system is made available to fire departments by FEMA through the National Fire Data Center of the USFA (FEMA, 1989).

According to the FEMA publication Uses of NFIRS (1997c), the USFA and the National Fire Information Council (NFIC) jointly manage the NFIRS. The NFIC is a user group comprised of volunteers who donate their time

to maintain the existing system and research, and implement changes to improve it. The members of NFIC come from state agencies and metropolitan fire departments responsible for fire data collection and analysis.

At present, over 14,000 fire departments nationwide participate in the NFIRS (S. Stewart, personal correspondence, June 3, 1998). The NFIRS database represents the world's largest national annual database of fire incident information. Participating departments report an average of over one million fires each year. The NFIRS database comprises roughly one half of all fires that occur annually in the United States (FEMA 1997e).

Annual NFIRS data are used as the basis for the USFA's publication Fire in the United States, which is the single most comprehensive reference on the nature and scope of the fire problem in the United States (FEMA, 1997d). The NFIRS has two primary objectives: (a) to help state and local governments develop fire reporting and analysis capability for their own use, and (b) to obtain data that can be used to more accurately assess and subsequently combat the fire problem at a national level (FEMA 1997e). FEMA identified that perhaps the most fundamental use of NFIRS is "understanding the nature of the fire problem, whether conceived at the national, state or local level" (FEMA, 1997d, p. 3).

The USFA uses NFIRS for many purposes. Among these are (a) prioritizing the many fire issues existing in the United States; (b) identifying aspects of the fire problem that require continued monitoring, additional research, or administrative action; (c) quantifying the costs of fire, in terms of lives and property, and educating the public and political leaders about the need for improved fire safety; and (d) providing a means of measuring the impact of agency programs and activities (FEMA, 1997d).

NFIRS data are also used by the USFA to identify emerging fire problems and to rank the causes and scenarios of fire. This information is used to target studies of the leading fire problems in more detail than is possible with other data sources. NFIRS data are currently being used to identify populations at high risk of experiencing fires so that educational efforts can specifically target these groups. The USFA also uses NFIRS data to choose targets for its national fire prevention campaigns. Furthermore, the NFPA uses NFIRS data to conduct its own research studies, to form its public education materials and marketing strategies, and to respond to data requests from various NFPA technical committees (FEMA, 1997d).

The USFA publication Uses of NFIRS states:

> Fire service public educators use the big numbers on specific fire problems to initiate local fire safety…. NFIRS data help identify the types of fires that are most prevalent in an area and alert

> fire service members when new types of problems arise. Members of the fire service can pass on this information to the media and to the public to make them aware of potential fire problems. (FEMA 1997d, p. 17)

Another use of NFIRS data is to justify funding of programs for dealing with community fire problems as they are identified. The data collected are particularly useful for designing fire prevention and education programs specifically suited to the real fire problems a community or a state is facing (FEMA, 1997d).

Hall (1991) identified several viable uses for fire experience data on a state and local level including (a) showing value of proposed fire safety and fire protection programs and legislation; (b) targeting fire prevention and suppression programs; (c) backing up budget requests; (d) enacting and enforcing fire codes; (e) developing community fire safety education programs; (f) monitoring an agency's progress; and (g) ensuring effective and equitable fire safety laws and regulations.

Why the Current NFIRS Cannot Identify Home Day Care Fires

After responding to an incident, fire department personnel in participating states fill out appropriate NFIRS reports. These reports describe the nature of the call; the action firefighters took in response to the call; and the end result. Included in the submitted information is a field designated as the fixed property use code. Although some forms filled out by fire department personnel may be state-specific, they contain a core of information common to the national reporting system. The uniform definitions, classifications, and reporting methods allow compilation of nationwide data relative to the fire experience in various occupancies (FEMA, 1997d).

The current version of the NFIRS is formally known as NFIRS 4.1. This version was finalized and first distributed to the nation's fire service in 1989. The statistical reporting format used by NFIRS 4.1, including available choices for fixed property use codes, was based on the reporting format of the 1976 edition of NFPA Standard 901 Uniform Coding for Fire Protection (FEMA, 1989). The general property use codes available in the 1976 edition of NFPA 901, and subsequently the corresponding fixed property use codes used by the NFIRS 4.1, did not recognize home child care occupancies as a specific type of building use (NFPA, 1976).

NFPA Standard 901's general property use codes underwent a major revision one year later in the 1990 edition of that standard (NFPA, 1990). However, the updated edition, that did in-fact allow differentiation between day care centers and home day care occupancies, was not available to be referenced by NFIRS 4.1. For this reason, examination of the NFIRS 4.1 fixed property use codes pertaining to child care occupancies reveals no specific code

for identifying an in-home child care facility (FEMA, 1989).

Recommending Changes to NFIRS Procedures

The National Association of NFIRS States (NANS) was established in 1979 to provide NFIRS participants a forum to exchange ideas and discuss commons problems (FEMA, 1989). In 1981, the name of the organization was changed to the National Fire Information Council (NFIC). Each state participating in NFIRS has one representative in NFIC, as does each major metropolitan area that serves 500,000 or more people (FEMA, 1989).

The direct line of communication to NFIC is available through each state's NFIRS Project Manager. The method of communication is the use of the NFIC-1 Recommendation for Changes to NFIRS form. According to the NFIRS Handbook, this form is used to forward suggestions about NFIRS to the state program manager who will, in turn, forward them to the NFIC Systems Committee for use during any future consideration of changes to NFIRS . The NFIC-1 form and instructions for its use are found in the appendix of each NFIRS Handbook (FEMA, 1989). According to Mr. Stanford Stewart of the USFA's Fire Data Branch, the process has been used in the past to suggest modifications pertaining to the expansion of day care facility classification options within the NFIRS. These suggestions have included modifying the fixed property use codes to identify home day care occupancies within the reporting system (S. Stewart, personal correspondence, June 3, 1998).

Updating the NFIRS

In recent years, the USFA, in cooperation with the NFIC, has been working on a new version of the NFIRS. This updated edition will be formally known as NFIRS 5.0. According to Mr. Stanford Stewart of the USFA National Fire Data Center, implementation of the new NFIRS version is expected to begin in the first state in January 1999. States will be added to the NFIRS 5.0 program one at a time over the next several years (S. Stewart, personal correspondence, June 3, 1998). The new NFIRS 5.0 is expected to make several improvements in the fire data collection process. The new version will benefit the public by providing much more detailed information about fires. Also, local officials will be able to use this information to better target specific fire problems and trends in their state or municipality (USFA, 1998b).

According to Stewart, the USFA has worked with the NFPA to have the NFIRS fixed property use codes be the same, consolidated, standard set of codes identified by the latest edition of NFPA 901. This will result in fire departments being able to identify a day care facility even if the facility is not a center, and serves a small number of clients (NFPA, 1995). The proposed NFIRS 5.0 codes will allow the following identification of day care facilities

(a) day care in a commercial property; (b) day care in a residence, licensed; and (c) day care in a residence, unlicensed (S. Stewart, personal correspondence, June 3, 1998).

Therefore, the updated NFIRS 5.0 will, for the first time in the history of the national fire data collection system, allow for identification of home day care occupancies. Furthermore, the system will allow responding fire departments to distinguish between licensed and unlicensed facilities (USFA, 1998b).

Public Perception of Fire

Even if quantitative data relative to the fire experience in home day care occupancies are eventually identified through the NFIRS 5.0, this may not result in public acceptance of stricter fire safety requirements for these occupancies. The American fire service often finds justification for more ambitious fire prevention programs, public education agendas, and stricter fire code requirements by examining the nation's fire loss statistics. However, there is literature to support an argument that the public does not perceive the fire problem as seriously, or at least not care to prioritize it as highly, as those responsible for fire prevention and suppression. Studies indicate that Americans misunderstand the danger of fire and traditionally resist regulation, even when it provides for their own safety.

A recent study by the NFPA indicated that the American public is apathetic and dangerously misinformed when it comes to the threat of fire. According to the study, 1996 statistics indicate 4,990 people were killed in U.S. fires, and that 81% of these deaths occurred in the home. Despite these facts, the study showed that 58% of those questioned believe they have more than two minutes to get out of a building when a fire is discovered and 24% think they have as much as 10 minutes before their lives are threatened. The study notes that in practical terms, these statistics mean that most people have no understanding of how little time elapses before light, gray smoke turns into killing black smoke or how fast a deadly flashover can occur. The survey also revealed that only 7% think that fire is a major risk in their home. Unfortunately, 22% admitted that their reaction to a smoke detector alarm was to treat it as a malfunction and remove the battery (NFPA, 1997b).

In the publication Fire in the United States 1985-1994, it is noted that "The general public does not appreciate the magnitude of the fire problem in the home or the importance of doing its share to reduce fires in the home" (FEMA, 1997b, p. 3). The same report identified American's lack of awareness and failure to realize the seriousness of fire to communities and the country as factors in keeping the U.S. fire problem one of the worst in the world per capita. The report noted several possible factors for the higher fire and fire death rates in the United States

including (a) the commitment of fewer resources in terms of dollars and staff time to fire prevention activities compared to other industrialized countries, (b) greater tolerance in the United States for accidental fires, and (c) a false sense of confidence that causes Americans to practice riskier and more careless behavior than people in other countries.

Osborne and Gaebler (1992) noted that despite NFPA statistics indicating the highest fatality rate from fire in the industrial world, most local jurisdictions in the United States continue to spend most of their money responding to fires, rather than preventing them. The USFA publication Fire Death Rate Trends also identified that different cultural attitudes towards the role of government result in differences between U.S. fire departments and foreign fire departments. Specifically, the report stated that "Attitudes in many other countries hold that government should be actively involved in protecting the health and welfare of citizens. However, Americans have, in general, less tolerance for active government" (FEMA, 1997a, p.12). The report further noted that this difference in attitudes has important ramifications when dealing with the issue of fire, especially in the way in which fire protection issues are regulated.

In addition to psychological and mindset differences between Americans and other cultures relative to issues of fire safety, construction features of American homes contribute to higher fire loss statistics. Schaenman (1982) pointed out that in contrast to many European and Asian cultures most American homes are not designed with ease of egress in mind. He noted that few American homes are well compartmentalized and many have interior rooms without easy multiple escape routes. In addition, open space housing designs that are currently popular allow fires to spread easily from one part of a house to another. American homes are also more likely to have doorless doorways that contribute to the rapid spread of fire.

Model Building and Life Safety Codes

Adoption and enforcement of standards that regulate the construction of, and operating conditions within, buildings in a community is a central concern to fire authorities. Bruno stated:

> When it comes to saving lives and property on a grand scale, nothing is more important than the strict enforcement of strong building, fire and life safety codes…and when a disaster does occur, the post-fire investigation often reveals weak codes, with loopholes and grandfather clauses, or codes that were poorly enforced.…That's why the writing and implementation of model codes is a vital concern to the fire service and why so much is at stake in the ongoing effort to create one

uniform code for the entire nation. (1998, p. 20)

Authorities having jurisdiction (AHJs) over building construction and fire safety issues often adopt existing model code requirements. Although AHJs may modify codes for particular interests or idiosyncrasies in their community, adoption of a model code saves the time and expense of code development. Furthermore, adoption of a nationally recognized model code offers other benefits in the form of published code books and accompanying explanatory documents, code interpretation services, assistance with legal challenges, periodic code updates, and input into the code change process from a broader experience base than may be available in any one jurisdiction.

The predominant model codes and code writing groups in the United States are the (a) BOCA National Building Code published by the Building Officials and Code Administrators International, Inc. (BOCA); (b) Standard Building Code published by the Southern Building Code Congress International, Inc. (SBCCI); (c) Uniform Building Code published by the International Conference of Building Officials (ICBO); and (d) previously discussed LSC published by the NFPA (Cote and Grant, 1997).

The three model building code groups -- BOCA, ICBO, and SBCCI -- have also combined to form the International Code Council (ICC). Although each model building code publisher remains an independent organization relative to the content of their respective publications, representatives of the groups have combined efforts in ICC projects to develop international code publications in an attempt to standardize requirements. The latest effort, still under development by the ICC, is the International Building Code (Cote and Grant, 1997).

In 1996, the NFPA joined forces with the ICC in an effort to develop an international fire code. The fire service community was encouraged that, for the first time, a singular standard would combine the requirements of the three model building code organizations and the world's predominant fire safety association (the NFPA). However, in 1998, the NFPA announced that talks with the ICC had broken off (NFPA Update, 1998).

The cessation of work by the ICC and the NFPA on development of an international fire code is relevant to this research. Bruno (1998) cited the primary reason for the NFPA abandoning work on the international fire code was "philosophical differences over the way in which codes are formulated and who can or cannot vote on proposed regulations" (p. 20). Bruno also wrote that the NFPA takes a consensus approach to code development, in which a wide range of experts have a voice and a vote on code provisions. In contrast, the ICC member organizations incorporate fire and life safety measures into their overall building codes, but only code enforcers (mostly building officials) have a vote in the process. The model building code groups are dominated by building officials, "even

though 70 percent of the typical building code deals with fire and life safety issues" (Bruno, 1998, pg. 20).

Who develops codes and standards, and what serves as the basis of justification for code requirements are logical questions from the regulated community. This was one of the courses of investigation followed by Illinois home day care organizations when they made complaints to the Illinois legislature about LSC requirements. Examination of a list of the committee members who are responsible for LSC criteria applicable to home day care occupancies reveals state and local fire service regulators, private code consultants and designers, school district and board of education officials, representatives of religious affiliations, private architects, and a private fire alarm contracting company (NFPA 1997a). Examination of lists of members of the model code groups responsible for development of home day care criteria reveals only regulatory personnel, primarily from jurisdictions that have adopted and enforce the respective model codes.

Arguments exist in support of both the NFPA's consensus approach and the more exclusionary methods of the model building code organizations. The NFPA believes that their code development process results in consensus input from varied sources including enforcers, users, designers, insurers, etc. It is believed that through this methodology a code can be developed that represents the needs and interests of enforcement authorities as well as building designers, owners, and users. In contrast, the code development process practiced by the model building code organizations claims to eliminate various special interest influence by only allowing code enforcement personnel to determine code content (personal experience of the author).

Justifying model code requirements for home day care occupancies is more elusive than identifying who makes code content decisions. The model building code organizations and the NFPA have established written procedures for suggesting modifications to existing code requirements or proposing new regulations. These procedures require substantiation for proposed requirements or modifications (Cote and Grant, 1997).

Cote and Grant (1997) further noted that "the requirements contained in building codes are generally based upon the known properties of materials, the hazards presented by various occupancies, and the lessons learned from previous experiences, such as fire and natural disasters" (p. 1-43). Nevertheless, justification for both code requirements and recently proposed code modifications pertaining to home day care occupancies reveals that decisions have not been based upon quantitative fire experience data relative to these occupancies. This is not surprising considering the previously identified absence of NFIRS data pertaining to home day care occupancy fires.

Justification for new code requirements often takes the general form of a perception of possibly unsafe

outcomes from an existing building configuration or operating feature. Code writing committee members apply their prior experience and intuition to determine if particular arrangements or scenarios present need for changes to building, fire or life safety regulations. Comparison is often made to existing sections of model codes that prescribe protection for similar occupancy classifications or use conditions. Rarely are specific code requirements attributable to scientific or quantifiable data from actual fires in operating occupancies (personal experience of the author).

The development of performance-based code language is an effort towards such scientific and quantifiable justification of a code's requirements for adequate building performance. Performance-based codes may be contrasted to most current model codes that are prescriptive in nature. Model codes currently prescribe specific criteria (e.g., fire duration of building components, travel distance to an exit, corridor width, etc.). Performance-based codes allow for a more comprehensive approach to solving fire and life safety issues. Strong reliance is made upon computer analysis of fire behavior and human exiting performance scenarios within a particular occupancy (Richardson, 1994). All of the model building code groups and the NFPA are in the process of developing performance-based language for inclusion in their codes.

Performance-based codes are characterized by three properties that distinguish them from prescriptive codes: (a) clearly stated objectives in terms of outcomes that are valuable in themselves – e.g., lives and property saved - and not just because of a presumed link to valued outcomes; (b) specification of verifiable performance requirements with demonstrated quantifiable links to the objectives; and (c) permitting any solution that meets the performance requirement (Richardson, 1994).

Watts (1997) recognized a deficiency in current prescriptive code requirements when compared to performance-based code criteria:

> Most building codes maintain only a tenuous relationship between fire safety requirements and fire safety objectives. For example, the number of exits has an intuitively positive correlation with life safety, but no explicit relationship and no functional association for determining cost-benefit. (p. 9-11)

Puchovsky (1991) noted that prescriptive codes provide safety only in generic fashion by prescribing a combination of specific requirements, such as construction materials, limiting dimensions, or protection systems. However, he recognized that prescriptive codes do not refer to how these measures achieve a desired level of safety or outcome. In fact, he noted, a measurable level of safety is usually

neither stated nor defined. In contrast Puchovsky wrote “Under performance-based regulations any solution that demonstrates completion of fire safety goals would be permitted. Fire safety would be designed for a specific use or application, rather than a generic occupancy” (p. 11-89).

Specific Model Code Requirements for Home Day Care Occupancies

1996 BOCA National Building Code.

The BOCA National Building Code (NBC) classifies day care occupancies as a form of residential, educational, or institutional occupancy. The classification depends upon the age and the number of the children that occupy the day care facility. Occupancy classifications, identified as Use Groups by the NBC, do not exist specifically for day care homes. Table 2 summarizes the classification of day care occupancies within the 1996 BOCA NBC (BOCA, 1997a).

Table 2

Day Care Occupancy Classification – 1996 BOCA National Building Code

Age of children	Number of children	Use group
Older than 2-1/2 year	More than 5	E
2-1/2 years or younger	More than 5	I-2
All ages	5 or less	R-3

Note. E = Educational, I = Institutional, R = Residential.

Child care facilities housing more than five children 2-1/2 years old and younger are classified in Use Group I-2 because children younger than 2-1/2 years old are not typically capable of independently responding to an emergency, but must be led or carried to safety. Under such circumstances, the occupants are considered non-ambulatory (BOCA, 1997b).

Day care occupancies that are classified within the educational use group include facilities intended to be used for the care and supervision of more than five preschool children for less than 24 hours per day. These facilities do not contain at any time more than five children who are 2-1/2 years of age or less. Children under 2-1/2 years usually are not able to recognize an emergency and may not respond appropriately. Thus, a maximum of five children under the age of 2-1/2 years is permitted. If more than five children under the age of 2-1/2 years are cared

for, then the facility is classified in Use Group I-2 (BOCA , 1997b).

Therefore, regardless of the appearance of a structure, it is actually the number and the age of the children that are served within a building that determines the NBC use group classification. For example, serving more than five children under the age of 2-1/2 years of age in a single-family residence would cause a day care home to comply with institutional occupancy requirements. Regardless of age, when more than five children are present in a day care home occupancy the NBC imposes requirements that are more stringent than those applicable to a single- or two-family residential dwelling. Specific NBC fire safety criteria applicable to each classification of day care occupancy are presented in Appendix A. (See Table A1).

1997 ICBO Uniform Building Code.

The ICBO Uniform Building Code (UBC) classifies day care occupancies as either a form of residential occupancy or educational occupancy. The classification depends upon the number of children present and not the age of the children served by the day care facility. Occupancy classifications, identified as Use Groups by the UBC, do not exist specifically for day care homes. Table 3 summarizes the classification of day care occupancies within the 1997 ICBO UBC (ICBO , 1997).

Table 3

Day Care Occupancy Classification – 1997 ICBO Uniform Building Code

Number of children	Use group
6 or less	R-Division 3
More than 6	E-Division 3

Note. R = Residential. E = Educational.

Therefore, regardless of the appearance of a structure, it is actually the number of children that are served within a building that determines the UBC use group classification. The UBC allows up to and including six persons to be served within a day care home with the occupancy still allowed to be classified as a residential use group. This contrasts with the SBCCI's Standard Building Code designation of five persons as the differentiating number of occupants between residential and educational use group classification.

Operating a day care home for more than six children in a single-family residence would require such a day

care home to comply with educational use group requirements of the UBC. Examination of those educational use group requirements of the UBC reveals more stringent criteria than those applicable to a single- or two-family residential dwelling (ICBO, 1997). Specific ICBO UBC fire safety criteria applicable to each classification of day care occupancy are presented in Appendix A (See Table A2).

1997 SBCCI Standard Building Code.

The SBCCI Standard Building Code (SBC) classifies day care occupancies as either a form of residential occupancy or educational occupancy. Similar to the requirements of the UBC, the classification depends upon the number of children present, and not the age of the children served by the day care facility. Occupancy classifications, identified as Use Groups by the SBC, do not exist specifically for day care homes. Table 4 summarizes the classification of day care occupancies within the 1997 SBCCI SBC (SBCCI , 1997).

Table 4

Day Care Occupancy Classification – 1997 SBCCI Standard Building Code

Number of children	Use group
5 or less	R- 3
More than 5	E

Note. R = Residential. E = Educational.

Therefore, regardless of the appearance of a structure, it is actually the number of children that are served within a building that determines the SBC use group classification. For example, serving more than five children in a single-family residence would be reason for a day care home to comply with educational use group requirements. Examination of those educational use group requirements of the SBC reveals more stringent criteria than those applicable to a single- or two-family residential dwelling (SBCCI, 1997). Specific SBC fire safety criteria applicable to each classification of day care occupancy are presented in Appendix A. (See Table A3).

1997 NFPA Life Safety Code.

The NFPA LSC classifies day care facilities according to the number of clients that are served in the occupancy. Table 5 summarizes the classification of day care occupancies within the 1997 LSC (NFPA, 1997).

Table 5

Day Care Occupancy Classification – 1997 NFPA Life Safety Code

Number of Clients	Classification
4-6	Family Day Care Home
7-12	Group Day Care Home
Greater than 12	Day Care Center

Therefore, regardless of the appearance of a structure, it is actually the number of children that are served within a building that determines the LSC classification and resulting fire safety criteria. A single-family residence, if serving more than 12 clients, would be classified as a day care center regardless of the home-style setting. Contrarily, a day care facility serving from four to six clients would be classified as a family day care home, even if located in a commercial-type structure.

The fire safety criteria of the LSC applicable to family and group day care homes are very similar. However, the requirements for both family and group day care homes differ dramatically from those applicable to day care centers. Specific LSC fire safety criteria applicable to each classification of day care occupancy are presented in Appendix A. (See Table A4).

The requirements of the LSC applicable to either family or group home day care occupancies are more stringent than those applicable to single-family dwellings. Single-family residences are not required to comply with LSC day care home requirements for vertical opening protection in the form of doors separating basements or upper levels from the level of exit discharge; interior finish throughout single-family residences is required to be only Class C; travel distance to an exit is unspecified in a single-family residence; and fire exit drills are not required to be practiced by occupants of a single-family residence. Most controversial of the LSC requirements for both family and group home day care occupancies is a requirement that basements used for day care purposes be provided with a door leading directly to the outside of the building. This requirement precludes the use of an interior stairway leading through the first floor of the home to serve as the primary means of escape from a basement day care area. A similar requirement is not found in the LSC's requirements applicable to single- and two-family residential dwellings (Lathrop, 1991).

Procedures

Historical and descriptive research was conducted through several avenues including literature review, personal correspondence, personal interviews, and use of survey instruments.

Literature Review

Literature searches were initiated at the National Emergency Training Center's (NETC) Learning Resource Center (LRC) in April 1998 during the author's attendance at the National Fire Academy. Additional searches were conducted within the public library systems of the city of Chicago and villages of Bartlett and Schaumburg, Illinois. The private libraries of the University of Illinois at Chicago and the author's alma maters, the Illinois Institute of Technology and Roosevelt University, were also consulted. Code examination was conducted at the NFPA library in Quincy, MA. Extensive searches were also conducted on-line through internet search engines to identify published documents, web-sites, organizations, and newsletters with content relative to the subjects of regulation and the fire experience in home day care occupancies. The author's private collection of fire and model building code publications as well as past code change proposals from the model code organizations were also examined.

Personal Interviews and Correspondence

Personal interviews and written correspondence were conducted with experts in various applicable fields. Electronic mail correspondence was conducted with Mr. Stanford Stewart, project officer of the USFA Data Branch. Mr. Stewart is responsible not only for management of the current NFIRS 4.1 program but also the development and implementation of the updated NFIRS 5.0 version. Mr. Stewart's e-mail reply to specific questions relative to the NFIRS is dated June 3, 1998. A personal interview with Ms. Kathy Gerstner, research specialist for the USFA Data Branch, was also conducted on April 6, 1998 while the author was in attendance at the National Fire Academy. Ms. Gerstner assisted in answering questions relative to general NFIRS use and specifically the origin and use of fixed property use codes within the NFIRS.

Within Illinois, several personal interviews were conducted with Illinois Deputy State Fire Marshal Jack Ahern. Mr. Ahern is responsible for fire prevention code development and program delivery on a statewide basis in Illinois. Mr. Ahern served as the Deputy State Fire Marshal during the contentious period when the Illinois OSFM proposed adoption of the LSC raised objection from the home day care community. He was interviewed on April 14, 1998, April 23, 1998 and May 13, 1998.

Ms. Kay Johnson, who serves as the current coordinator of the Illinois OSFM's IFIRS program, was

interviewed on May 13, 1998. Follow-up written correspondence was also conducted with Ms. Johnson on May 22, 1998. Personal correspondence was also conducted with Ms. Donna Bartlett, administrative assistant with the Illinois OSFM's Management Information Division, on May 22, 1998. Ms. Barbara Petrilli, who before her recent retirement served as the past coordinator of the IFIRS program, was interviewed on April 27, 1998. Ms. Johnson, Ms. Bartlett, and Ms. Petrilli all offered insight into the development, operation, and procedures affiliated with the IFIRS.

Written correspondence and requests for information were also made to several child care advocacy organizations including the National Association for Family Child Care, the National Safe Kids Campaign, the Child Care Action Campaign, the Conference Board Work and Family Information Center, the National Association for the Education of Young Children, the National Council of Jewish Women, the Hartford Area Child Care Collaborative, the National Resource Center for Health and Safety in Child Care, the National Academy of Early Childhood Programs, the Council of Early Childhood Professional Recognition, the Child Care Law Center, and Resources for Child Caring. Not all of the organizations responded, however many did offer general child care and home day care information and leads to other literary resources.

Survey Instruments

Two similar survey instruments were developed to collect information pertaining to fire safety regulation and fire incident data collection relative to home day care occupancies. The first survey, Survey of State Fire Marshal Agencies – Home Day Care Occupancy Regulations, (see Appendix B) was mailed to the state fire marshal offices (or the recognized fire enforcement authority) of each state in the United States. Similarly, the second survey, Survey of State Child Care Licensing /Regulatory Agencies – Home Day Care Occupancy Regulations, (see Appendix C) was mailed to the agency responsible for child care facility licensing in each state of the United States.

The survey instruments were first reviewed by co-workers of the author in the Illinois OSFM for clarity of content and functionality of design. They were not however, field tested on sample groups. The elimination of sample testing was based on consideration of the content and nature of the surveys. The survey questions are objective rather than subjective in nature. The surveys request quantitative data and written code requirements rather than personal feeling or opinion. All of the information requested in the surveys could have otherwise been obtained by examining the rules, standards, and records of each individual state's child care agency and fire authority. Use of the survey instruments saved time and effort that would have been necessary to request such documents through

freedom-of-information procedures from each individual state.

The surveys were originally mailed on May 1, 1998. To encourage responses, each survey was covered by an original (not a photocopy) letter on Illinois OSFM stationary. (See Appendices D and E). Furthermore, in addition to the cover letter and survey instrument, each mailing included a stamped, self-addressed envelope to accommodate return mailing to the author. Agencies that had not responded by July 15, 1998 were mailed another survey package, under a second cover letter that again requested their response. (See Appendix F). This second mailing again included a stamped, self-addressed envelope to the author. Also, when a survey answer appeared contradictory in comparison to other information offered in the response, the author re-contacted state authorities by telephone or written correspondence for clarification. Due to time constraints imposed by EFOP applied research project guidelines, August 20, 1998 was established as a cut-off date for collection of survey response information. State agencies that had not responded to either the first or second survey mailing by August 20, 1998, or returned their survey after that date, were considered non-respondents.

The content of returned surveys was entered into a table-format database using Microsoft Excel 97 for Windows. All tabular information was then imported into Microsoft Word for Windows 6.0 format for inclusion in this report. Separate tables were developed to compile survey information from (a) state fire authorities (see Table I2); (b) state child care licensing authorities (see Table I3); and (c) the most stringent fire safety criteria applicable in a state, as identified by either the state's fire authority or child care authority. (See Table I4).

After returned survey responses were tabulated, fire incident statistics from the four states that reported record keeping relative to home day care occupancies were analyzed. Fire incident data for home day care occupancies, including (a) number of fires, (b) fire deaths, (c) fire injuries, and (d) dollar loss, were compared on a per capita basis to data for all residential occupancies in each respective state. Fire incident data for residential occupancies in each state were obtained from the USFA NFIRS Fire Profile website (USFA, 1998a). Statistics pertaining to the number of residential housing units in each of the four states were obtained from the U.S. Census Bureau Housing and Household Economic Statistics website (U.S. Census Bureau, 1998). Fire incident data specific to home day care occupancies were obtained from the survey instrument returned by each respective state agency. (See Table I1).

A third survey instrument was prepared to obtain information from model code organizations. This survey was entitled Model Building Code Survey – Home Day Care Occupancy Regulations. (See Appendix G). The

survey requested information pertinent to the model code's requirements for home day care occupancies. These model code surveys were mailed on June 3, 1998 to BOCA, ICBO, SBCCI and the NFPA. As with the state agency surveys, these surveys were mailed with original cover letters on OSFM stationary (see Appendix H) and included a stamped, self-addressed envelope for return of the completed survey.

Assumptions and Limitations

An expected limitation of the research was that the NFIRS database, and the fire databases of the great majority of individual states, do not include information relative to the fire experience in home day care occupancies. Although this limited the opportunity to conduct analysis of a comprehensive database of home day care fire statistics, it did serve to answer the research question pertaining to the availability of quantitative fire data. Furthermore, literature searches proved that most publications addressing the subject of home day care occupancy licensing or operation were silent on the issue of fire safety. Again, although this prohibited in-depth analysis of literature content, it did address research questions pertaining to the absence of fire safety regulations or alternative databases pertaining to home day care fires.

Survey results were limited by a number of factors. The first was an assumption that individuals with sufficient knowledge of the subject to complete the survey answered all survey questions accurately. This appears not to have always been true. Some surveys indicated apparent conflicting information in the answers offered. When errors were suspected in survey responses, follow-up telephone contact was made with the person who had completed the survey. Although this process worked well to clarify discrepancies, it cannot be assumed that completely accurate information was contained in other surveys where conflicting answers were not obvious enough so as to require follow-up telephone contact.

Another identified survey limitation was that some state agencies returned two completed copies of the survey instrument, but with differing responses. This could have resulted from two scenarios (a) the survey form had been duplicated within the state, and assigned to more than one person to provide a response; or (b) the first survey that was received by the agency may have been in the mail back to the author when a second survey was mailed to that state because of an assumed no-response from the agency. In the two cases where multiple surveys were returned from the same agency with differing information, telephone contact was made with respondents and clarification of discrepancies was attempted.

Some returned surveys contained sporadic unanswered questions. In such cases, comparison with other

responses contained in the same survey allowed determination of the reason for this exclusion. However, when it was not possible to determine intent by cross-matching blank question responses with other survey responses, assumptions were made that the information was not available, did not apply, or the respondent was unaware of the correct response.

Also, survey responses from some agencies indicated that the state was in the process of rule or procedure modification at the time of the survey. Therefore, assurance of the accuracy of results can only be made as of the exact date of survey completion. Rules and licensing criteria may now be in place that are significantly different than those existent at the time of the survey.

The research project was also limited by time. The six month submission criteria of the EFO program did not allow for expansion of research into related issues including (a) correlating known home day care occupancy fires with the number of clients served, time of the fires, staffing available at the time of the fire, the degree of code compliance present, and whether the day care home was licensed or unlicensed; (b) development of actual performance-based code criteria for home day care occupancies; (c) development and submission of proposed code language modifications and associated substantiations to the model code organizations; and (d) a study of the political and social influences impacting each individual state's home day care occupancy licensing regulations and fire safety criteria. These subjects warrant further investigation and offer material for expansion of this research in the future by the author or others.

Definition and Clarification of Selected Terms

BOCA. The Building Officials and Code Administrators International, Inc. Publishers of the National Building Code, one of the model building codes.

Day care center. A child care facility typically operated outside of a residential home. Although the exact definition varies from jurisdiction to jurisdiction depending upon licensing regulations, day care centers are typically characterized by a larger client population than day care homes, separation of child care areas by age group, multiple staff members, and supervisory level personnel with early childhood development degrees or background. Day care centers are typically regulated as businesses, and often have corporate status or franchise affiliation.

Day care home. A child care facility established within the provider's home, typically a single-family residence, but also allowed within a single apartment of an apartment building in many jurisdictions. Most jurisdictions restrict such classification to an owner-occupied residence. These occupancies are often further sub-

classified as family day care homes or group day care homes depending upon the number of clients served. The term day care home is used interchangeably in this paper with the term home day care occupancy.

Family day care home. A child care facility established within the provider's home, typically a single-family residence, but also allowed within a single apartment of an apartment building in many jurisdictions. The word family is used by many jurisdictions to identify a day care home serving a lesser number of children than a group day care home, but does not imply that the clients being cared for are members of the provider's blood family. Family day care homes are typically characterized by a low number of staff, with care sometimes given by the owner alone. Many jurisdictions allow family day care homes to operate unrestricted or simply require registration of such homes, without subsequent on-site inspections or licensing fees.

Fixed property use code. The term used by the NFIRS to identify the three digit number code entered into an incident report to designate the type of the occupancy at which an incident occurred. This research results, at least in-part, from the fact that a fixed property use code specific to a home day care occupancy does not exist in the NFIRS.

General property use code. The term used by NFPA Standard 901 to refer to the three digit code that identifies the type of occupancy at which an incident occurred. NFPA general property use codes serve as the basis for NFIRS fixed property use codes.

Group day care home. A child care facility established within the provider's home, typically a single-family residence, but also allowed within a single apartment of an apartment building in many jurisdictions. The word group is used by many jurisdictions to identify a home serving a larger number of children than a family day care home, or simply a day care home. Group day care homes are typically characterized by a greater number of staff than a family day care home, but not necessarily personnel with child care development education or certification. Although some jurisdictions allow unrestricted operation of a group day care home, most require registration or licensing and include on-site inspection of the facility.

ICBO. The International Conference of Building Officials. Publishers of the Uniform Building Code, one of the model building codes.

ICC. The International Code Council. Comprised of representatives from BOCA, ICBO, and SBCCI. The ICC was formed in 1995 with the intended purpose of combining the codes of the three model building code organizations into single national models.

IFIRS. The Illinois Fire Incident Reporting System. Essentially, the IFIRS is a copy of the National Fire Incident Reporting System (NFIRS) adopted for use in Illinois. Illinois has made no specific modifications to the NFIRS program.

Life Safety Code. NFPA Standard #101 The Life Safety Code (LSC). This is not a mandated standard of the federal government, but rather an NFPA standard that addresses fire protection design, construction, and operating issues. The LSC is only enforceable as law, rule, or ordinance if the authority having jurisdiction has adopted it. The standard has in-fact been adopted by hundreds of municipalities and several state fire authorities.

NFIRS. The National Fire Incident Reporting System. The data collection program overseen by the USFA's National Fire Data Center. NFIRS is currently used by fire departments in 42 states. It is estimated that approximately one half of all U.S. fire incidents are reported to the USFA through the NFIRS system, making it the largest database of fire incidents in the world.

NFIRS 4.1. The current version of the USFA's NFIRS data collection program is known as version 4.1.

NFIRS 5.0. The recently developed version of the USFA's NFIRS data collection program has been identified as NFIRS 5.0. This latest version is currently undergoing beta-testing and is scheduled to be put to use in the first state in January 1999. Additional states will then be updated from NFIRS 4.1 to NFIRS 5.0 in subsequent years.

NFPA. The National Fire Protection Association. Publishers of the Life Safety Code and NFPA Standard 901 Classification for Incident Reporting and Fire Protection Data. Contrary to the mistaken belief of many, this organization is not a federal agency and NFPA standards and codes are not enforceable unless adopted by an authority in a particular jurisdiction.

SBCCI. The Southern Building Code Congress International, Inc. Publishers of the Standard Building Code, one of the model building codes.

Use Groups. The model building codes (NBC, SBC, and UBC) prescribe building classifications and related requirements according to use groups that distinguish and identify the activity or purpose for which a building is occupied.

Results

1. What is the importance of quantifying the fire experience in home day care occupancies? Specific cases do exist where fire authorities were forced to modify adoption of nationally recognized code criteria for home day care

occupancies as the result of insufficient fire incident data to support requirements. Furthermore, it was identified that the use of home day care is continuing to expand both in number of occupancies and number of children served. The literature search revealed that NFIRS data, if available, can be used to identify occupancies with increasing fire experiences, tailor fire prevention and public education programs to reach a particular audience, and serve as a benchmark for enforcement policies and code requirements pertaining to a specific occupancy classification.

2. Why does the NFIRS not provide data relative to home day care occupancies?

The research revealed that the fixed property use codes currently used in the NFIRS are based upon the 1976 edition of NFPA Standard #901. That now outdated edition of NFPA 901 did not recognize home-based day care as a fixed property use type. Therefore, responding fire departments cannot identify an incident's location as a home day care occupancy. Obviously, without the capability of entering data into the NFIRS at the individual department level, statistics cannot be retrieved at any level to determine the fire experience in day care homes.

The USFA Data Branch has developed an updated version of the NFIRS that will be titled NFIRS 5.0. This updated NFIRS version will base fixed property use codes upon an updated edition of NFPA Standard 901. The updated NFPA standard, and therefore the updated version of the NFIRS, both recognize a home day care occupancy as an available choice among fixed property use codes. Unfortunately, the updated version of the NFIRS will not be available to all states for several years. Therefore, the majority of the fire service will be without a comprehensive national database relative to the home day care fire experience for some time.

3. What is the prescribed method to influence modification of the NFIRS?

Although the research revealed that an updated NFIRS has already addressed the issue of identifying a fixed property code for home day care occupancies, it also investigated the methods available to fire departments to influence such modifications. As part of the NFIRS program, the USFA Data Branch makes Form "NFIC 1" available to users of the system. This form is designed to allow fire departments to suggest modifications to the system. It is partially because of suggestions made through this process that the updated NFIRS 5.0 will allow for identification of home day care occupancies.

4. Are there alternative databases that quantify the fire experience in day care homes?

An alternative database to the NFIRS that can comprehensively quantify either the nation's or Illinois' fire experience in home day care occupancies was not identified. Survey results did indicate that several state child care licensing agencies have client injury reporting requirements. However, not one state child care licensing agency

reported any statistics regarding the number of fires, fire injuries, or fire deaths in home day care occupancies.

Furthermore, fire authorities from only four states – California, Kansas, Nevada, and Oregon – were able to produce quantifiable data relative to the home day care fire experience. These were the only four states where fire authorities responsible for the management of NFIRS reported having modified their state's reporting system to accommodate collection of data pertaining to home day care occupancies. Statistics from California, Kansas, and Oregon indicated a per capita fire experience in home day care occupancies that is significantly lower in terms of number of fires, fire deaths, fire injuries, and dollar loss, than the fire experience in all residential occupancies. Only one fire death in a home day care occupancy in the past 10 years (in Kansas) was able to be identified in the United States (See Table I1). Nevada did not report NFIRS data to the USFA over the past five years, and comparison of fire rates in all residential occupancies vs. home day care occupancies was not possible for that state.

5. How do home day care fire safety regulations compare state-by-state?

Research results indicate that there are significant differences in the fire safety criteria and licensing rules applied to home day care occupancies by individual states. Survey results from state fire authorities and state child care licensing agencies are presented in Appendix I. (See Tables I2, I3, and I4). Highlights of the survey results include:

(a) Home day care occupancies were found to be controlled by some form of registration, regulation, licensing, or inspection by 97.4% of responding state child care licensing agencies (38 of 39) and 80.0% of responding state fire authorities (32 of 40).

(b) Fire safety criteria applicable to home day care occupancies were indicated to be more stringent than that applicable to single-family dwellings by 73.0% of the responding state fire authorities (28 of 40) and 89.7% of responding state child care licensing agencies (35 of 39).

(c) Injuries to home day care clients are required to be reported to state child care authorities according to 76.3% of the responding state child care licensing agencies.(29 of 38). However, none of the responding state child care regulatory agencies indicated any available statistics relative to child care injuries as the result of fire over the past 10 years.

(d) The number of children allowed to be cared for in a home day care occupancy ranged from a minimum of 5 (New Jersey and North Carolina) to a maximum of 20 (Missouri and South Dakota).

(e) The minimum number of children required to be cared for in order for a home to be subject to regulation as a home day care occupancy ranged from a minimum of 1 (in several states) to a maximum of 13 (South Dakota).

(f) Some form of minimum staff-to-client ratio requirements were applicable to home day care occupancies according to 94.9% of the responding state child care licensing agencies (37 of 39).

(g) The LSC or one of the model building codes have been adopted, or serve as the basis for rules, applicable to home day care occupancy fire safety and building criteria in 45.7% of the responding states (21 of 46).

(h) Fire exit drills from home day care occupancies were indicated to be required by 87.0% of the responding states (40 of 46).

(i) Smoke detection was indicated to be required in a home day care occupancy by 97.8% of responding states (45 of 46).

(j) Fire extinguishers are required to be provided in a home day care occupancy by 93.5% of responding states (43 of 46).

(k) Home day care occupancies are allowed to be located in an apartment building in 89.1% of responding states (41 of 46).

(l) Basements are prohibited from being used as locations for home day care occupancies in 28.2% of the responding states (13 of 46). The second floor of a home is prohibited from being used for day care purposes in 26.1% of the responding states (12 of 46).

(m) Overnight care of children is allowed in a home day care occupancy by 45.0% of the responding state fire authorities (18 of 40) and 94.9% of the responding state child care licensing agencies (37 of 39). In those states where overnight care is allowed, 44.4% of the responding state fire agencies (8 of 18) and 81.1% of state child care licensing agencies (30 of 37) indicated that all staff members are allowed to sleep while the clients are asleep.

(n) Only 26.3% of the state child care licensing agencies (10 of 38) indicated that the location of home day care occupancies are regularly shared with state fire authorities.

(o) The majority of responding states indicated that home day care fire safety standards had been updated within the past 3 years. Surveys indicated that 70.0% of responding state fire authorities (19 of 27) reported having updated home day care fire safety standards during this time period. Similarly, 73.0% of responding state child care licensing agencies (19 of 26) that answered the related survey question indicated that they had updated fire safety

regulations within the past 3 years. The state reporting the longest period since updating home day care fire safety standards was Kentucky (1974).

(p) Some degree of participation in the NFIRS was reported by 90.0% of responding state fire authorities (36 of 40).

6. How do model code criteria applicable to day care homes compare and how are they justified?

The research indicated that the model building codes and the LSC differ in their occupancy classification and prescriptive fire safety requirements for home day care occupancies. (See Tables 2 through 5; Appendix A Table A1, A2, A3 and A4). Furthermore, the research indicated that all of the codes studied prescribe more stringent fire safety criteria for a home day care occupancy than are applicable to a single- or two-family residential dwelling. There is no evidence that the home day care occupancy regulations of the model codes are based upon any quantitative data relative to fire experience in these occupancies.

Discussion

The literature search revealed no past studies that specifically attempted to quantify the fire experience in home day care occupancies. Furthermore, the existence of research identifying a comprehensive home day care occupancy fire database or fire data collection method could not be confirmed. There was also an absence of work relating code requirements of the model codes to documented fire experience in home day care occupancies.

It was not expected that the research would unveil a heretofore unrealized extensive fire problem in home day care occupancies. Rather, it was the intent to discover why there is an absence of information within the fire service, on virtually a nationwide basis, pertaining to the fire experience in these occupancies. It was also the intent of the research to assimilate statistical information about home day care fires from sources outside the fire service. Specifically, state child care licensing agencies were surveyed to determine if alternative databases were already established. The existence of established databases would obviously offer the fire service an opportunity for immediate analytical work without the need to wait for NFIRS 5.0 data to be assembled in the future. Criteria of the model codes and state regulations pertaining to home day care fire safety were examined to determine consistency and learn if quantitative substantiation existed for code requirements.

Interpretation

The research identified the reason the NFIRS fails to recognize home day care occupancies. It is not because day care homes are too few in number, or a perception that day care homes do not represent a fire threat.

Rather, home day care occupancies were simply not as predominant in American society at the time the current version of the NFIRS program was developed. Therefore, a fixed property use code was not assigned for these occupancies. The NFIRS fixed property use codes accessed extensively by the fire service today were formulated over twenty years ago by the committee that developed NFPA Standard 901.

The research revealed that over the past two decades social changes have caused a dramatic increase in the number of home day care occupancies across the nation. This increased use of home day care has apparently been noticed by the NFPA 901 Committee and the developers of the updated NFIRS 5.0. Home day care occupancies are now recognized within NFPA 901, and the new NFIRS 5.0. This will provide the fire service, for the first time, the opportunity to identify a fixed property use as a home day care occupancy when reporting fire experiences.

There is no evidence to support an argument that the fire experience in home day care occupancies is reflected in overall residential fire statistics. On the contrary, home day care fire statistics from the states that reported data collection systems for these occupancies indicate a fire experience that is significantly lower than that reported in a proportionate number of residential occupancies within those respective states. (See Table I1). Specifically, when analyzed on a per capita basis, the number of fires in home day care occupancies over the past five years in the reporting states averaged less than 16% of the number of fires experienced in all residential occupancies in those states. Furthermore, per capita fire deaths, fire injuries, and dollar loss figures are far below those experienced in residential fires. Only one fire death in a home day care occupancy was reported in the past 10 years amongst the four reporting states – Kansas in 1987.

The fire service is forced to acknowledge that, unless modified, the largest collection of statistical fire data in the world, the NFIRS database, does not include information pertaining to the fire experience in home day care occupancies. However, even in the absence of any supporting data that the fire experience in home day care occupancies mirrors that in all residential settings, code writers and fire prevention enforcement personnel are understandably apprehensive of potential problems in day care homes. Familiarity with the overall fire experience and fire death problem in residential occupancies, combined with statistics that indicate children are one of the most vulnerable groups relative to fire, causes the fire service to ponder the potential for tragedy in home day care occupancies.

The history of fire prevention code development and enforcement is littered with after-the-fact reactions to disastrous incidents. Illinois, and the nation, changed exiting requirements for public assembly occupancies after 602

died in the Iroquois Theater fire in downtown Chicago in 1903. Fire prevention code enforcement was stiffened for elementary and secondary schools after the 1958 fire in Our Lady of the Angels grammar school on Chicago's West Side killed 93. Boston's 1942 Coconut Grove fire, in which 492 nightclub occupants were killed, resulted in changes for fire safety criteria pertaining to interior finish requirements and led to widespread adoption of the Building Exits Code that later evolved into the LSC. In 1949 the St. Anthony's Hospital fire in Effingham, Illinois resulted in 74 fire deaths and forced changes in allowable health care occupancy construction standards (Teague, 1991; Hall & Cote, 1997). The memory of these reactive rather than proactive responses to past fire tragedies has influenced fire and code authorities towards applying more stringent regulations in home day care occupancies than are applicable in single-family dwellings.

On the contrary, persuasive arguments have been made by child care facility advocates who contend that home day care occupancies should not be subject to more stringent fire safety regulations than single-family dwellings. Although true that some states will allow as many as 20 children in a day care home environment, most restrict occupancy to between 12 and 16 children. Furthermore, the majority of states require conditions that offer safer child supervision conditions than found in most single-family homes, including specific staff-to-client ratios and exiting drills. In addition, although the survey results indicated that many states allow nighttime care to be conducted in home day care occupancies, the vast majority of such occupancies care for children only during daytime hours.

Therefore, on one hand the fire service is faced with the realization that the U.S. fire experience in residential occupancies has been disastrous. Also, fire prevention and building code development has historically been reactive rather than proactive. These arguments are easily documented and lend influence to enforcement of stricter fire safety criteria in residential day care homes. On the other hand, day care home owners and many state agencies with interest in expanding the availability of day care services to working parents argue that fire safety criteria need not be as stringent as required by most current codes. Although arguments against more stringent fire safety regulations are many and varied, a commonly repeated theme is the inability of fire service organizations to offer any quantifiable proof of a fire experience problem particular to home day care occupancies.

That the LSC and model building codes define day care homes differently, and prescribe differing degrees of fire protection for these occupancies, is not surprising. The processes for development and modification of the codes are substantially different. Although the NFPA allows consensus style decision making from a variety of

interests, the model code groups specify that only regulators are allowed to decide on code requirements. Furthermore, there are geographical and social influences apparent in the code development process. The SBC, developed and maintained by the SBCCI is predominantly adopted and influenced by fire and building code officials in the southeast section of the United States. The BOCA NBC is primarily viewed as a Midwestern adopted and influenced standard. The UBC of the ICBO has enjoyed adoption success in the western half of the country. The IBC, being developed by the International Code Council, essentially compiles the views and requirements of the three model building code groups. Some would argue that in so compiling code requirements, the IBC results in less defendable criteria than the individual model codes from which component parts are taken.

All of the code writing organizations studied develop code criteria through committee processes. However, none of the organizations offered correlation of their code's prescriptive requirements for day care homes to specific statistical data relating to the incidence of fire in that particular occupancy classification. This of course adds credence to the argument presented by home day care owners that code requirements are arbitrarily decided. Although the NFPA code development procedure does appear to be more consensus-based than that exhibited by the three model building code groups, there is no evidence that this consensus approach resulted in more justifiable criteria in the NFPA LSC's requirements for home day care occupancies.

Implications

The research clearly indicates that the number of day care home occupancies in the U.S. is increasing as the result of various social reasons. Recognition of this by the fire service and the NFIC is critical to modifying the NFIRS, developing code criteria, and assisting with the formulation of public fire education programs.

Although the research identified that the updated NFIRS version 5.0 will, for the first time, offer NFIRS users the ability to identify home day care occupancies, there is no guarantee that this will result in a viable statistical database for use by the fire service anytime in the near future. This is attributable to two reasons. First, state adoption and use of the updated NFIRS 5.0 version is voluntary. Although currently planned for implementation in the first state in January 1999, adoption of the NFIRS 5.0 in the other 41 states currently using the NFIRS 4.1 system will take years. Secondly, and possibly more important as a long term hindrance to identifying home day care fires, is that responding fire departments will continue to classify home day care occupancies as single-family residences in many cases. The NFIRS identifies the purpose of the fixed property use code as an identifier of the primary use of the occupancy. Even if day care services are offered within a residence, it is likely

that many responders will identify the primary use of the home as a single-family dwelling or possibly apartment building, and not a home day care occupancy.

Home day care occupancies appear to be viable candidates for performance-based code application once methods are simplified and more commonly recognized. Support for performance-based codes has gained recent popularity. The model building code groups, as well as the NFPA, are currently in the process of developing performance-based chapters or language within their code documents.

Under performance-based assessment, varying degrees of stringency may be applied to different facilities. Essentially, application of fire safety criteria may be done on a case-by-case basis if specific performance can be proven. Home day care occupancies, by definition being located in smaller residential settings, may find it easier to comply with general fire safety parameters than prescriptive requirements. A movement away from the current prescriptive requirements of the LSC and the model building codes would appear beneficial to both the regulated home day care community and fire prevention enforcement agencies. Both groups currently struggle with the issue of just how safe prescriptive code requirements make home day care occupancies.

Complying with performance-based code criteria may initially result in intricate and expensive analysis. Performance-based designs rely heavily upon successful results from computer fire modeling of prescribed fire scenarios in a particular occupancy. This could obviously be cost-prohibitive for smaller individual occupancies such as day care homes. However, the science of performance-based design will evolve through improvements in computer fire modeling methods, familiarity with applications by designers and code-enforcers, and increasing databases of previously accepted design configurations. As this occurs, it can be expected that performance-based design acceptance will become practical for even smaller occupancies. It is feasible that stereotypical single-family residential configurations, materials, and furnishings will be computer modeled to exhibit code complying fire scenario performance. As the comfort level of AHJs advances, performance-based analysis of these residential configurations may be transferable from other similarly constructed homes without each actually undergoing the expense of individual computer modeling.

Enforcement authorities, often faced with limited resources, need to examine a myriad of factors when determining inspection and public education priorities. State and municipal fire authorities are often charged with fire safety for all occupancies within their jurisdiction. Whether to concentrate inspection personnel in schools, hospitals, nursing homes, day care facilities, multi-family housing, or public assembly occupancies is usually a

decision open to political, budgetary, and statistical debate. Just as code enforcement authorities use statistical fire database information to justify increases in field personnel or to launch new inspection initiatives, so must they be willing to relax prescriptive code requirements and inspection programs when those same statistics indicate the absence of a fire problem in a particular occupancy.

It must be considered that home day care occupancies that choose to circumvent licensing or regulation, and thus do not meet even basic fire prevention criteria, are those most likely to experience fire incidents and injuries. Enforcement of basic fire safety measures, including the installation of adequate smoke detection, the practice of fire exit drills, and the presence of adequate supervisory staff, all present in the majority of state home child care licensing rules, appears to adequately address fire safety issues. Adopting and enforcing more stringent fire safety criteria for licensed home day care occupancies than is justified by quantitative data will result in an increase in owners attempting to circumvent licensing procedures altogether.

Code writers and enforcers may understandably argue that the absence of comprehensive fire experience data for home day care occupancies is cause in-and-of itself to continue applying stringent fire safety criteria to these occupancies until more statistics are gathered. Furthermore, some may perceive that it is because educational or institutional type fire safety criteria have been applied to these occupancies in many locations, that the fire experience and fire loss statistics are as low as reported. However, examination of the data and fire safety criteria from the states that track home day care fire incidents, suggests otherwise. The fire safety standards of California, Kansas, and Oregon offer minor impositions for home day care occupancies compared to those applicable to single-family residential dwelling criteria. Yet, the fire safety record pertaining to home day care occupancies is far better than that for all residential occupancies in each respective state. (Although Nevada reported home day care occupancy fire data, residential occupancy fire statistics were not available for comparison purposes).

Recommendations

Based upon this research, the following recommendations are made:

1. State fire authorities should consider early adoption of the updated NFIRS 5.0. Considering the strong opposition to Illinois' fire prevention code modifications, this applies to the Illinois OSFM in particular. As the research identified, the updated version 5.0 will provide for identification of both licensed and unlicensed home day care occupancies. This will allow individual fire departments, state fire authorities, and the nation's fire service to begin to formulate a more comprehensive database relative to the fire experience in these homes.

2. State fire authorities need to establish better lines of communication with state child care regulators to share information relative to child care injuries and fire incidents in particular. State child care agencies, most with procedures in place that mandate child injury reporting, need to ensure that fire-related injury information is collected and then disseminated to the fire service. It is specifically recommended that the Illinois OSFM establish a designated liaison to the Illinois DCFS Office of Rules and Procedures - Licensing Division to allow for immediate reporting of fire incidents and burn injuries as well as to coordinate future rule change proposals between the agencies.

3. Regulators should consider development or adoption of performance-based code criteria in-general and develop specific requirements applicable to home day care occupancies. Although prescriptive requirements for home day care occupancies should not be abandoned, it must be realized that the lack of quantitative fire experience data for home day care occupancies is likely to exist for several years. Continued application of unjustified prescriptive code requirements will result in continued challenges from the regulated community.

4. Model code writing organizations need to consider the resistance encountered by regulators who attempt to adopt and enforce the model codes. Code requirements and code modifications need to be justified on a quantitative basis. Lack of such justification exposes enforcement agencies to challenges that may result in modification to model code adoption, or the inability to adopt a model code altogether. Model code groups also need to continue to work towards developing performance-based code language. This will allow focus on fire safety outcomes and objectives rather than non-quantifiable prescriptive criteria. Specifically, the existing home day care occupancy fire experience data from California, Oregon, and Kansas need to be examined. Institutional and educational occupancy criteria imposed on home day care occupancies by the model codes need to be relaxed.

5. Until more comprehensive NFIRS 5.0 nationwide data becomes available, state fire authorities should consider data from the four states that do compile home day care occupancy fire statistics. These data indicate that on a per capita basis, the number of home day care fire incidents, fire deaths, fire injuries, and resultant dollar loss due to fire are all extremely low when compared to figures pertaining to residential occupancies in general. That the potential for a fire or fire death exists in a home day care occupancy cannot be argued. However, the available statistics indicate such events occur with extremely low frequency.

It must also be considered that enforcement of only basic fire prevention criteria will protect against most deaths and injuries in home day care occupancies. The application of more complex fire safety requirements

intended for educational or institutional occupancies may be overbearing and unjustified based upon available statistics. The presence of smoke detection in a day care home (that the research indicated is required in 97.8% of responding states), combined with fire exit drills (presently required in 87.0% of responding states) and the mandating of specific supervisory staff-to-client ratios, (reported to be required by 94.9% of the responding states) all contribute to the excellent fire safety record in these occupancies. Enforcement of more stringent standards than can be quantitatively justified may result in an increased number of home day care operators simply circumventing licensing rules. Increased numbers of unlicensed day care homes that are not subject to the basic fire safety scrutiny applied by the majority of state licensing authorities, will eventually be problematic to the fire service.

6. Unless the modified NFIRS 5.0 begins to offer data indicating a more serious national fire experience problem in home day care occupancies, it is recommended that fire safety inspections for such occupancies be conducted by child care licensing agency representatives. State and local fire department inspection personnel can be more effectively used elsewhere and reserved for day care homes only when extensive client numbers or special hazardous arrangements are present.

It is specifically recommended that Illinois continue with the current inspection program that allows the majority of day care homes to receive fire safety inspections by a DCFS licensing representative rather than an OSFM inspector. Larger capacity group day care homes and those homes with unorthodox arrangements or exiting schemes may require the assistance of the OSFM. Such homes however, represent the small minority of all home day care occupancies.

References

Boschee, M.A., & Jacobs, G. (1997). Childcare in the United States: yesterday and today. Online. Available at National Network for Child Care website: www.nncc.org. Accessed May 10, 1998.

Bruno, H. (1998, July). Battling over the code process. Firehouse, 20.

Building Officials and Code Administrators, International. (1997a). BOCA national building code. (1996 ed.). Country Club Hills, IL: Author.

Building Officials and Code Administrators, International, Inc. (1997b). BOCA national building code 1996 commentary. Country Club Hills, IL: Author.

Cadden, V. (1995). How does your state rate. Working Mother, 18(3), 21-32.

Carlson, M. (1995). How to start a quality childcare business in your home. Nashville, TN: Thomas Nelson, Inc.

Cote, A.E., & Grant, C.C. (1997). Building and fire codes and standards. In A. Cote (Ed.), Fire Protection Handbook (18th ed., pp. 1-42 – 1-54). Quincy, MA: NFPA.

Federal Emergency Management Agency, United States Fire Administration, National Fire Information Council. National fire incident reporting system handbook. (1989).

Federal Emergency Management Agency, United States Fire Administration, National Fire Data Center. Fire death rate trends: an international perspective. (1997a).

Federal Emergency Management Agency, United States Fire Administration, National Fire Data Center. Fire in the United States 1985-1994. (ninth edition) (1997b).

Federal Emergency Management Agency, United States Fire Administration, National Fire Information Council. Socioeconomic factors and the incidence of fire. (1997c).

Federal Emergency Management Agency, United States Fire Administration, National Fire Information Council. Uses of NFIRS. (1997d).

Federal Emergency Management Agency, United States Fire Administration, National Fire Data Center, What is NFIRS. (1997e) [Brochure].

Ford Foundation Letter, Increasing the quantity and quality of child care. Summer 1990 Volume 21 No. 2.

Gormley, W.T. Jr. Accommodation and conflict in four states. Public Administration Review. v57n4 Jul/Aug 1997 p. 285-293.

Haddock, N. (1996). Family Childcare. Parenting, August, 147-148.

Hall, J.R. (1991). Use of fire incident data and statistics. In A. Cote (Ed.), Fire Protection Handbook (18th ed., pp. 11-21 - 11-38). Quincy, MA: NFPA.

Hall, J.R., & Cote, A.E. (1997). America's fire problem and fire protection. In A. Cote (Ed.), Fire protection handbook (18th ed., pp. 1-1 - 1-26). Quincy, MA: NFPA.

Howkins, N.L. (1993). Profitable child care (how to start & run a successful business). New York: Facts on File, Inc.

Illinois Administrative Code (1992a) Title 89 Part 406 Licensing standards for day care homes.

Illinois Administrative Code (1992b) Title 89 Part 408 Licensing standards for group day care homes.

Illinois Administrative Code (1993) Title 41 Part 100 Rules for fire prevention and safety.

Illinois Child Care Act (1969) P.A. 46-63, 225 ILCS 10.

Illinois Department of Children and Family Services (1998). Statewide licensing of day care homes and day care centers. Online. Available http://www.state.il.us/dcfs/statday.htm. Accessed April 14, 1998.

Illinois Department of Labor. (1994). Day care and life safety standard task force: report to the general assembly. Chicago: Illinois Department of Labor.

International Conference of Building Officials/International Fire Code Institute. (1997). Uniform building code. Whittier, CA: Author.

Lathrop, J.K. (Ed.). (1991). Life safety code handbook (5th ed.). Quincy, MA: NFPA.

MacIssac, K.S. (1992, August). Home occupation day care facilities and their fire prevention issues which affect the Wheeling fire department. (Applied Research Project). Emmitsburg, MD: National Fire Academy, Executive Fire Officer Program.

Modigliani, K., Reiff, M. & Jones, S. (1994). Opening your door to children: how to start a family day care program. Washington, DC: National Association for the Education of Young Children.

National Fire Protection Association. (1976). NFPA 901: Uniform coding for fire protection. (1976 ed.). Quincy, MA: Author.

National Fire Protection Association. (1990). NFPA 901: Uniform coding for fire protection. (1990 ed.). Quincy, MA: Author.

National Fire Protection Association. (1991). NFPA 101: Code for safety to life from fire in buildings and structures. (1991 ed.). Quincy, MA: Author.

National Fire Protection Association. (1995). NFPA 901: Standard classifications for incident reporting and fire protection data. (1995 ed.). Quincy, MA: Author.

National Fire Protection Association. (1997a). NFPA 101: Code for safety to life from fire in buildings and structures. (1997 ed.). Quincy, MA: Author.

National Fire Protection Association (1997b). National fire escape survey. Quincy, MA: Author.

NFPA Update. (1998, April/May). IFC agreement ends. Issue 824.

National Resource Center for Health and Safety in Childcare. (1998). National health and safety performance standards: guidelines for out-of-home child care programs. Denver, CO: Author.

National Safe Kids Campaign. (1997). Injury fact sheet. Washington, DC: Author.

Osborne, D. and Gaebler, T. (1992) Reinventing government: how the entrepreneurial spirit is transforming the public sector. Reading, MA: Addison-Wesley Publishing.

Puchovsky, M. (1991). Performance-based fire codes and standards. In A. Cote (Ed.), Fire Protection Handbook (18th ed., pp. 11-89 - 11-94). Quincy, MA: NFPA.

Richardson, J.K. (1994, May/June). Moving towards performance based codes. NFPA Journal, 88, 71-78.

Schaenman, P. (1982) International concepts in fire protection: ideas from Europe that could improve U.S. fire safety. Arlington, VA: TriData Corporation.

Senate Resolution 156, 88th Illinois General Assembly, (1993).

Southern Building Code Congress International, Inc. (1997). Standard building code. Birmingham, AL: Author.

Squibb, B. (1986). Family day care (how to provide it in your home). Boston, MA: The Harvard Common Press.

Steelsmith, S. (1994). How to open and operate a home-based day care business. Old Saybrook, CT: Globe Pequot Press.

Teague, P. (1991). Case histories: fires influencing the Life Safety Code. In J. Lathrop (Ed.), Life Safety Code Handbook (5th ed., pp. 943-955). Quincy, MA: NFPA.

United States Census Bureau (1998). Housing and Household Economic Statistics. Available

http://www.census.gov/prod/www/titles.html#house. Accessed August 8, 1998.

United States Fire Administration (1998a). NFIRS Fire Profile. Online. Available http://www.usfa.fema.gov/nfirs/index.cfm. Accessed August 8, 1998.

United States Fire Administration (1998b). NFIRS 5.0 reference guide. Online. Available http://www.usfa.fema.gov/newnfirs/refguide.htm. Accessed May 3, 1998.

Watts, J.M. (1997). Assessing life safety in buildings. In A. Cote (Ed.), Fire Protection Handbook (18th ed., pp. 1-42 - 1-54). Quincy, MA: NFPA.

Appendix A - Model Code Requirements for Home Day Care Occupancies

Table A1

1996 BOCA National Building Code Day Care Occupancy Requirements

Required components or equipment	Applicable use groups		
	R-3 (5 or less children)	E (More than 5 children older than 2-1/2 years)	I-2 (More than 5 children 2-1/2 years or younger)
Automatic sprinkler system	No	No[a]	No[b]
Exit signage	No[c]	Yes[d]	Yes[e]
Emergency lighting	No[c]	Yes[d]	Yes[e]
Vertical opening protection	No	Yes	Yes
Smoke detection	Yes	No	Yes[f]
Complete alarm system	No	Yes	Yes
Portable fire extinguishers	No	Yes	Yes
Interior finish classification			
Vertical exits	III	I	I
Corridors & exit access	III	II	I
Rooms & enclosed spaces	III	III	I

Note. Table was developed by the author from examination of 1996 BOCA National Building Code and the survey instrument returned by BOCA International, Inc. R = Residential. E = Educational. I = Institutional. Interior finish is sub-classified within the National Building Code from I (best performing) to III (worst performing).

a. Automatic sprinklers not required if occupancy is located at level of exit discharge, serves 100 or less occupants, and exits lead directly to the exterior of the building. b. Automatic sprinklers required if building is > 20,000 ft^2. c. Required if building is more than one story or serves more than 10 occupants. d. Not required if building is only one

story and serves less than 50 occupants. e. Not required if building is only one story and serves 10 or less occupants. f. Smoke detection system required unless an automatic sprinkler system is provided.

Table A2

1997 ICBO Uniform Building Code Day Care Occupancy Requirements

Required components or equipment	Applicable Use Groups: Group E - Division 3 (Day-care for more than 6 persons)	Group R - Division 3 (6 or less people)	Group I - Division 1 Nurseries for full time care of children under the age of 6 - for more than 5 children	Group I - Division 2 Homes for children six years of age or over – for more than 5 children – 24 hrs. per day
Automatic sprinkler system	No	No	Yes	Yes
Exit signage	No[a]	No	Yes[a]	Yes
Emergency lighting	No	No	Yes	Yes
Vertical opening protection	Yes	No	Yes	Yes
Smoke detection	Yes	Yes	Yes	Yes
Complete alarm system	No[b]	No	Yes	Yes
Portable fire extinguishers	No	No	No	No
Interior finish classification				
Vertical exits	I	III	I	I
Corridors & exit access	II	III	I	II
Rooms & enclosed Spaces	III	III	II	II

Note. Table was developed by the author from examination of 1997 ICBO Uniform Building Code and the survey instrument returned by ICBO. R = Residential. E = Educational. Interior finish is sub-classified within the Uniform Building Code from I (best performing) to III (worst performing).

a. Exit signs not required if less than 50 occupants. b. Fire alarm system only required if greater than 50 occupants

Table A3

1997 SBCCI Standard Building Code Day Care Occupancy Requirements

Required components or equipment	Applicable Use Groups	
	Educational occupancy Group E (6 or more children of any age)	Residential occupancy Group R3 (5 or less children of any age)
Automatic sprinkler system	No	No
Exit signage	Yes	No
Emergency lighting	No[a]	No[b]
Vertical opening protection	Yes	No
Smoke detection	No	Yes
Complete alarm system	Yes	No
Portable fire extinguishers	No	No
Interior finish		
Vertical exits	A	C
Corridors & exit access	B	C
Rooms & enclosed spaces	C	C

Note. Table was developed by the author from examination of 1997 SBCCI Standard Building Code. R = Residential. E = Educational. Interior finish is sub-classified within the Standard Building Code from A (best performing) to C (worst performing).

a. Emergency lighting is required in educational occupancies only if occupied by more than 300 people. b. Emergency lighting is required in Residential R-3 occupancies only if occupied by more than 100 people.

Table A4

1997 NFPA Life Safety Code Day Care Occupancy Requirements

Required components or equipment	Applicable Use Groups		
	Family day care home (4 - 6 clients)	Group day care home (7-12 clients)	Day care centers (more than 12 clients)
Automatic sprinkler system	No	No	Some[a]
Exit signage	No	No	Yes
Emergency lighting	No	No	Yes
Vertical opening protection	No	Yes[b]	Yes
Smoke detection	Yes	Yes	Yes
Complete alarm system	No	No	Yes
Portable fire extinguishers	No	No	No
Interior finish classification			
Vertical exits	B	B	A
Corridors & exit access	C	B	A
Rooms & enclosed spaces	C	C	B

Note. Table was developed by the author from examination of 1997 NFPA Life Safety Code. Interior finish is sub-classified within the Life Safety Code from A (best performing) to C (worst performing).

a. Requirements for automatic sprinklers systems are dependent upon the level of day care occupancy and the construction classification of the building. b. For group day care homes, the doorway between the level of exit discharge and any story below shall be equipped with a door assembly having a 20-minute fire rating. Where the story of exit discharge is used for sleeping purposes, there shall be a door assembly having a 20-minute fire protection rating at the top or bottom of each stairway.

Appendix B

SURVEY OF STATE FIRE MARSHAL AGENCIES
HOME DAY CARE OCCUPANCY REGULATIONS

State: _____ Agency: _____

1. Does your agency regulate, register or inspect occupancies where child day care is conducted in the home by other than family members?

☐ Yes ☐ No

Explain: _____
_____
_____

2. If yes, is there a minimum number of children/clients in a home at which regulations take affect or inspections are conducted?

☐ Yes ☐ No If "Yes", what is this number: _____

Explain: _____
_____
_____

3. What is the maximum number of children that can be cared for in a home day care occupancy in your state before day care "center" fire safety regulations take affect? _____

Explain: _____
_____
_____

4. How many residential or "home" day care occupancies are currently inspected on an annual basis by your agency?
_____

Explain: _____
_____
_____

5. Does your agency impose any fire safety regulations in home day care occupancies that are more stringent than those applicable to a single family home that does not conduct child care?

☐ Yes ☐ No

Explain: _____
_____
_____

6. If your agency does impose any fire safety regulations in home day care occupancies that are more stringent than those applicable to single family homes, can you describe the more stringent standards, or include a copy of the fire safety standards in your return mailing, or refer to a national fire prevention or building code that is referenced by your rules?

Explain: _____
_____

7. If your agency does impose any fire safety regulations in home day care occupancies above and beyond those applicable to single family homes, and the regulations are based on other than the adoption of a nationally recognized model building or fire codes, can you describe the basis or justification for the adoption and enforcement of such standards?

Explain: _____
_____
_____

8. Who conducts fire safety inspections of home day care occupancies in your state? (Check all that apply)

☐ Home day care occupancy owners are required to conduct self inspections
☐ Local or county child care licensing agency representative are required to conduct such inspections
☐ State child care licensing agency representatives are required to conduct such inspections
☐ The state fire marshal's office or other state fire inspectors are required to conduct such inspections
☐ Local fire departments representatives are required to conduct such inspections and report results to your agency
☐ Local fire departments may conduct inspections if they so desire – with no responsibility to report to your agency
☐ No specific home day care occupancy inspections are required or conducted

Explain: _____
_____
_____

9. Does your agency require child/client injuries in home day care occupancies, that may include injuries attributable to fire, to be reported to your agency?

☐ Yes ☐ No

Explain: _____
_____
_____

10. If possible, please answer the following specific questions relative to fires in your state in HOME day care occupancies only:

	LAST YEAR	LAST 3 YEARS	LAST 5 YEARS	LAST 10 YEARS
Number of Fires	_____	_____	_____	_____
Number of Fire Injuries	_____	_____	_____	_____
Number of Fire Deaths	_____	_____	_____	_____
Total Dollar Loss Due to Fire	_____	_____	_____	_____

11. If information was able to be provided in answer to Question #10 above, what is the source of this information:

☐ Statewide statistics based upon local fire departments reporting via a modified NFIRS program
☐ Statewide statistics based upon a fire reporting system particular to your state
☐ Statewide statistics from your state's child care licensing agency
☐ Other

Explain: _____
_____
_____

12. Does your state participate in the National Fire Incident Reporting System?

☐ Our state does not formally participate in the NFIRS process
☐ Some fire departments use the NFIRS process, but state statistics are not collected
☐ Some fire departments use the NFIRS process, and fire statistics are collected by our agency
☐ All fire departments are required to use the NFIRS process, and fire statistics are collected by your agency

Explain: _____
_____
_____

13. The current National Fire Incident Reporting System does not identify a "home day care occupancy" as a fixed property use. Has your agency tailored the state's fire reporting system to specifically identify fire information relative to home day care occupancies?

☐ Yes ☐ No

Explain: _____
_____
_____

14. Are clients/children allowed to be cared for overnight in home day care occupancies in your state?

☐ Yes ☐ No

Explain: _____
_____
_____

15. If children are allowed to be cared for overnight in home day care occupancies in your state, please indicate by check mark which of the following apply:

☐ At least one staff person is required to be awake in the home if clients are present
☐ All staff members are allowed to sleep during nighttime hours in the home even if clients are present

Explain: _____
_____
_____

16. Are home day care occupancies in your state required to comply with minimum staffing requirements?

☐ Yes ☐ No

Explain: _____
_____
_____

17. When were <u>fire safety</u> rules applicable to home day care occupancies last revised by your agency/state?

_____

continued.....

FIRE PROTECTION FEATURES
(Please answer the following questions pertaining to specific fire safety criteria if possible)

1. Are smoke detectors required to be installed in home day care occupancies?

☐ Yes, and detectors must be powered by the home's electrical service (hard-wired)
☐ Yes, and detectors may be either electrically or battery powered
☐ Smoke detectors are not specifically required by any rules

Explain how this compares to smoke detector rules for single family homes that do not contain home day care occupancies:_____

2. Indicate by check-mark the areas of a residence where clients may be located in a home day care occupancy:

☐ Grade level (main floor) ☐ Basement ☐ 2nd Floor ☐ Garage

3. If clients are allowed to occupy basements in a home day care occupancy, check all of the following that apply:

☐ A minimum of two means of egress/escape are required from the basement
☐ Windows can be used as a means of egress/escape from the basement
☐ Windows can only be used as a "secondary" means of escape after a door, stairway, or other conventional means of escape is provided
☐ Only doors and/or stairs can serve as a means of escape, not a window
☐ At least one path of escape from the basement must go directly outside through a door without involving indoor stairways or windows

4. Are exits required to be marked with "exit marking signs" in a home day care occupancy?

☐ Yes ☐ No

5. Is emergency lighting required to be installed (in the event of power failure) in a home day care occupancy?

☐ Yes ☐ No

6. Are fire exit drills required to be conducted in a home day care occupancy?

☐ Yes ☐ No

7. Are portable fire extinguishers required to be present in a home day care occupancy?

☐ Yes ☐ No

8. Are home day care occupancies allowed to be located in apartment buildings?

☐ Yes ☐ No

Explanations/Other Comments: _____
_____
_____
_____
_____

Survey Completed By: _____ _____ _____
Name Title Date

Appendix C

SURVEY OF STATE CHILD CARE LICENSING/REGULATORY AGENCIES
HOME DAY CARE OCCUPANCY REGULATIONS

State: _____ Agency: _____

1. Does your agency regulate, register or inspect locations where child day care is conducted in the home by other than family members?

☐ Yes ☐ No

Explain: _____
_____
_____

2. If yes, is there a minimum number of children/clients in a home at which regulations take affect or inspections are conducted?

☐ Yes ☐ No If "Yes", what is that number?: _____

Explain: _____
_____
_____

3. What is the maximum number of children that can be cared for in a home day care occupancy in your state?
_____

Explain: _____
_____
_____

4. How many residential or "home" day care occupancies are currently licensed or registered in your state?
_____

Explain: _____
_____
_____

5. Does your agency impose any fire safety regulations in home day care occupancies that are more stringent than those applicable to a single family home that does not conduct child care?

☐ Yes ☐ No

Explain: _____
_____
_____

6. If your agency does impose any fire safety regulations in home day care occupancies that are more stringent than those applicable to single family homes, can you describe the more stringent standards, or include a copy of the fire safety standards in your return mailing, or refer me to a national fire prevention or building code that is referenced by the rules?

Explain: _____
_____
_____

7. If your agency does impose any fire safety regulations in home day care occupancies above and beyond those applicable to single family homes, and the regulations are based on other than the adoption of a nationally recognized building or fire code, can you

describe the basis or justification for the adoption and enforcement of such standards?

Explain: _____
_____
_____

8. Who conducts <u>fire safety</u> inspections of home day care occupancies in your state? (Check all that apply)

☐ Home day care occupancy owners are required to conduct self inspections
☐ Local or county child care licensing agencies are required to conduct such inspections
☐ Your agency's (state) child care licensing representatives are required to conduct such inspections
☐ The state fire marshal's office or other state fire inspectors are required to conduct such inspections
☐ Local fire department representatives are required to conduct such inspections and report results to your agency
☐ Local fire departments may conduct inspections if they so desire – with no responsibility to report to your agency
☐ No specific home day care occupancy inspections are required or conducted

Explain: _____
_____
_____

9. Does your agency require child/client injuries in day care homes, that may include injuries attributable to fire, to be reported to your agency?

☐ Yes ☐ No

Explain: _____
_____
_____

10. If your agency does keep any applicable statistics, please answer the following specific questions relative to fires in <u>HOME</u> day care occupancies only:

	LAST YEAR	LAST 3 YEARS	LAST 5 YEARS	LAST 10 YEARS
Number of Fires	_____	_____	_____	_____
Number of Fire Injuries	_____	_____	_____	_____
Number of Fire Deaths	_____	_____	_____	_____
Total Dollar Loss Due to Fire	_____	_____	_____	_____

11. If information was able to be provided in answer to Question #10 above, what is the source of this information (Check all that apply):

☐ Statewide statistics based upon mandatory reporting to local fire departments
☐ Statewide statistics based upon mandatory reporting to local child care agencies
☐ Statewide statistics based upon mandatory reporting to your state's fire marshal agency
☐ Statewide statistics based upon mandatory reporting to your (state) child care agency
☐ Voluntarily submitted statistics from home day care providers that may not be comprehensive
☐ Other

Explain: _____
_____
_____

12. Are children allowed to be cared for overnight in home day care occupancies in your state?

☐ Yes ☐ No

Explain: _____
_____
_____

13. If children are allowed to be cared for overnight in home day care occupancies in your state, please indicate by check mark which of the following applies:

☐ At least one staff person is required to be awake in the home if clients are present
☐ All staff members are allowed to sleep during nighttime hours in the home even if clients are present

Explain: _____
_____
_____

14. Are home day care occupancies in your state required to comply with minimum staffing requirements?

☐ Yes ☐ No

Explain: _____
_____
_____

15. Are the locations of home day care occupancies automatically given to either local or state fire prevention enforcement agencies by your agency?

☐ Yes ☐ No

Explain: _____
_____
_____

16. When were <u>fire safety</u> rules applicable to home day care occupancies last revised by your agency/state?

_____

<u>FIRE PROTECTION FEATURES</u>
<u>(Please answer the following questions pertaining to specific fire safety criteria if possible)</u>

1. Are smoke detectors required to be installed in <u>home</u> day care occupancies?

☐ Yes, and detectors must be powered by the home's electrical service (hard-wired)
☐ Yes, and detectors may be either electrically or battery powered
☐ Smoke detectors are not specifically required by any rules

Explain how this compares to smoke detector rules for single family homes that do not contain home day care occupancies:_____

2. Indicate by check-mark the areas of a residence where clients may be located in a home day care occupancy:

☐ Grade level (main floor) ☐ Basement ☐ 2nd Floor ☐ Garage

3. If clients are allowed to occupy <u>basements</u> in a home day care occupancy, check all of the following that apply:

☐ A minimum of two means of egress/escape are required from the basement
☐ Windows can be used as a means of egress/escape from the basement
☐ Windows can only be used as a "secondary" means of escape after a door, stairway, or other conventional means of escape is provided
☐ Only doors and/or stairs can serve as a means of escape, not a window
☐ At least one path of escape from the basement must go directly outside through a door without involving indoor stairways or windows

4. Are exits required to be marked with "exit marking signs" in a home day care occupancy?

☐ Yes ☐ No

5. Is emergency lighting required to be installed (in the event of power failure) in a home day care occupancy?

☐ Yes ☐ No

6. Are fire exit drills required to be conducted in a home day care occupancy?

☐ Yes ☐ No

7. Are portable fire extinguishers required to be present in a home day care occupancy?

☐ Yes ☐ No

8. Are home day care occupancies allowed to be located in apartment buildings?

☐ Yes ☐ No

Explanations/Other Comments: _____
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Survey Completed By: _____ _____ _____
Name Title Date

Appendix D

Cover letter for state fire agency survey

May 13, 1998

NAME
AFFILIATION/POSITION
ADDRESS
CITY, STATE, ZIP

To Whom It May Concern,

I am employed by the Office of the Illinois State Fire Marshal as a fire protection engineer. I am also a student in the National Fire Academy's Executive Fire Officer Program. To fulfill a requirement for the completion of the program, as well as supply the Illinois OSFM with applicable information, I am conducting research relative to fire safety in home day care occupancies. **I am requesting your agency's assistance by completing the attached short survey form.**

My research is centered around the issue of in-home day care by other than family members. One of the goals of this research is to collect data from state fire marshal offices, as well as state child care licensing agencies, relative to licensing and regulatory criteria in these occupancies. I am especially interested in whether your agency licenses or otherwise regulates such homes, if statistics are maintained relative to fires and/or fire injuries & deaths for these occupancies and whether special fire safety requirements are applied to such home day care occupancies above and beyond those that would be required for a single family home. It is the intent of my research to determine if quantifiable data concerning home day care fires is available, and use this information to determine and justify an appropriate level of fire safety criteria that should be applied to day care homes in Illinois. (Separate correspondence and surveys have been mailed to the child care licensing agency of your state).

My research has identified that the National Fire Incident Reporting System (NFIRS) used by many states to record and report fire incident information to the United States Fire Administration, does not provide for entry of data directly related to "home day care occupancies". Obviously, if fire incident data is not being collected for such occupancies, no meaningful statistics can be drawn from the NFIRS system to anticipate fire experiences in such occupancies, determine the appropriate level of fire safety code criteria to be applied to these homes, or measure the effect of code enforcement programs. (It is presumed that when fires in such occupancies have been encountered, fire departments using the NFIRS program have recorded the fire as a "residential fire incident", but have not, under the current NFIRS system, been able to distinguish if the fire occurred while a residence was also providing home day care services. Therefore, the fire experience specific to home day care occupancies is not determinable under the current existing national fire statistical database.)

Many state and local fire prevention codes, including some codes developed by nationally recognized code making bodies, have established more stringent fire safety criteria for residential occupancies that also conduct in-home child care. It is my intent to determine if the fire experience in home day care occupancies has been quantified in any state on a statistically meaningful basis, and if so, to use this information to either support or refute fire code criteria making requirements more stringent than those applied to single family homes. Furthermore, I plan to use the information to influence the United States Fire Administration to include home day care occupancies as one of the "fixed property use" codes able to be recorded in the updated NFIRS program that is currently under development.

To this end, I would appreciate your assistance

in completing the enclosed survey.

I have enclosed a stamped pre-addressed envelope and I would appreciate it if you would return the enclosed survey

to me. If the self-addressed label has in some manner been damaged or removed from the envelope, please return the information to:

Kenneth Wood
Office of the State Fire Marshal
100 West Randolph Street Suite 11-800
Chicago, IL 60601

I appreciate you assistance with this project. If you feel that it would be beneficial to contact me via telephone, fax or e-mail, those numbers are indicated below.

Respectfully,

Kenneth Wood
Fire Protection Engineer
Division of Fire Prevention

Phone: 312/814-3456
Fax: 312/814-3459
e-mail: Kwosfm@aol.com

Appendix E

Cover letter for state child care agency survey

May 13, 1998

NAME
AFFILIATION/POSITION
ADDRESS
CITY, STATE, ZIP

To Whom It May Concern,

I am employed by the Office of the Illinois State Fire Marshal as a fire protection engineer. I am also a student in the National Fire Academy's Executive Fire Officer Program. To fulfill a requirement for the completion of the program, as well as supply the Illinois OSFM with applicable information, I am conducting research relative to fire safety in home day care occupancies. **I am requesting your agency's assistance by completing the attached short survey form.**

My research is centered around the issue of in-home day care by other than family members. One of the goals of this research is to collect data from state child care licensing agencies as well as state fire marshal offices relative to licensing and regulatory criteria in these occupancies. I am especially interested in whether your agency licenses or otherwise regulates such homes, if statistics are maintained relative to fires and/or fire injuries & deaths for these occupancies and whether special fire safety requirements are applied to such home day care occupancies above and beyond those that would be required for a single family home. It is the intent of my research to determine if quantifiable data concerning home day care fires is available, and use this information to determine and justify an appropriate level of fire safety criteria that should be applied to day care homes in Illinois. (Separate correspondence and surveys have been mailed to the state fire marshal's office of your state).

My research has identified that the National Fire Incident Reporting System (NFIRS) used by many states to record and report fire incident information to the United States Fire Administration, does not provide for entry of data directly related to "home day care occupancies". Obviously, if fire incident data is not being collected for such occupancies, no meaningful statistics can be drawn from the NFIRS system to anticipate fire experiences in such occupancies, determine the appropriate level of fire safety code criteria to be applied to these homes, or measure the affect of code enforcement programs. (It is presumed that when fires in such occupancies have been encountered, fire departments using the NFIRS program have recorded the fire as a "residential fire incident", but have not, under the current NFIRS system, been able to distinguish if the fire occurred while a residence was also providing home day care services. Therefore, the fire experience specific to home day care occupancies is not determinable under the current existing national fire statistical database.)

Many state and local fire prevention codes, including some codes developed by nationally recognized code making bodies, have established more stringent fire safety criteria for residential occupancies that also conduct in-home child care. It is my intent to determine if the fire experience in home day care occupancies has been quantified in any state on a statistically meaningful basis, and if so, to use this information to either support or refute fire code criteria making requirements more stringent than those applied to single family homes. Furthermore, I plan to use the information to influence the United States Fire Administration to include home day care occupancies as one of the "fixed property use" codes able to be recorded in the updated NFIRS program that is currently under development.

To this end, I would appreciate your assistance

in completing the enclosed survey.

I have enclosed a stamped pre-addressed envelope and I would appreciate it if you would return the enclosed survey to me. If the self-addressed label has in some manner been damaged or removed from the envelope, please return the information to:

Kenneth Wood
Office of the State Fire Marshal
100 West Randolph Street Suite 11-800
Chicago, IL 60601

I appreciate you assistance with this project. If you feel that it would be beneficial to contact me via telephone, fax or e-mail, those numbers are indicated below.

Respectfully,

Kenneth Wood
Fire Protection Engineer
Division of Fire Prevention

Phone: 312/814-3456
Fax: 312/814-3459
e-mail: Kwosfm@aol.com

Appendix F

Follow-up cover letter to non-respondents

July 15, 1998

NAME
AFFILIATION/POSITION
ADDRESS
CITY, STATE, ZIP

To Whom It May Concern,

In May of this year I forwarded correspondence to your agency that included a survey pertaining to the rules and procedures of your state applicable to residential home day care occupancies. As of this date no response has been received. **In the event that the original mailing was misplaced, I have enclosed another blank copy of the survey.**

As with the original mailing, I have enclosed a stamped, self-addressed envelope for return of the survey. Also, I have also enclosed the original correspondence that explains my work in depth, and offers contact numbers if necessary.

I appreciate your agency's assistance with the matter and look forward to receiving your reply.

If the self-addressed label has in some manner been damaged or removed from the envelope, please return the information to:

Kenneth Wood
Office of the State Fire Marshal
100 West Randolph Street Suite 11-800
Chicago, IL 60601

Respectfully,

Kenneth Wood
Fire Protection Engineer
Division of Fire Prevention

Phone: 312/814-3456
Fax: 312/814-3459
e-mail: Kwosfm@aol.com

Appendix G

MODEL BUILDING CODE SURVEY
HOME DAY CARE OCCUPANCY REGULATIONS

CODE: _____ LATEST EDITION: _____

1. Does the code recognize home day care (or some variation of that name) as a specific occupancy classification?
☐ Yes ☐ No ☐ Does not address this issue

Explain:
_____
_____
_____

2. What different designations of day care facilities are recognized by the code? (family home, group home, center?)
_____
_____
_____

3. Is there a minimum number of children that must be cared for before the home day care classification is assigned?
☐ Yes ☐ No ☐ Does not address this issue

Explain:
_____
_____
_____

4 . What is the maximum number of children that can be cared for in a day care "home" before day care "center" (or some form of more stringent institutional) rules apply?
_____
_____
_____

5. Does the code specify staff-to-client ratios or minimums in home day care occupancies?

☐ Yes ☐ No ☐ Does not address this issue

Explain:
_____
_____
_____

6. Does the code address whether home day care clients can be cared for overnight in a day care home?

☐ Yes ☐ No ☐ Does not address this issue

Explain:
_____
_____
_____

OVER PLEASE

Please answer the following fire protection criteria questions relative to the code's requirements for operation of a home day care occupancy:

	YES	NO	EXPLANATION
Smoke detectors (SD) required?	☐	☐	_____
Battery operated SD allowed?	☐	☐	_____
Manual pull boxes required?	☐	☐	_____
Fire alarm system required?	☐	☐	_____
Sprinkler protection required?	☐	☐	_____
Two means of egress required?	☐	☐	_____
Basement occupancy allowed?	☐	☐	_____
2nd floor occupancy allowed?	☐	☐	_____
Fire extinguishers required?	☐	☐	_____
Exit marking signs required?	☐	☐	_____
Emergency lighting required?	☐	☐	_____
Interior finish requirements?	☐	☐	_____
Fire escape drills required?	☐	☐	_____
Windows allowed as exits?	☐	☐	_____
Enclosure of vertical openings?	☐	☐	_____

EXPLANATION / COMMENTS:

_____

_____

_____

_____

_____

_____

_____

Appendix H

Cover letter for model building code survey

June 3, 1998

MODEL CODE ORGANIZATION
ADDRESS
CITY, STATE, ZIP

To Whom It May Concern,

My name is Kenneth Wood and I am employed by the Office of the Illinois State Fire Marshal as a fire protection engineer. I am also currently enrolled in the Executive Fire Officer Program at the National Fire Academy in Emmittsburg, Maryland.

In partial completion of the requirements of the Executive Fire Officer Program, as well as to assist the Office of the State Fire Marshal in future policy making decisions, I am conducting research relative to the fire experience and applicable code requirements in home day care occupancies on both a state- and nationwide basis. In an attempt to uncover as much information as possible, I have previously surveyed both the child care licensing agency as well as the state fire marshal's office of every state to determine regulations applicable to these occupancies.

I am now in the process of attempting to examine the requirements of the nation's predominant model building codes and fire prevention standards relative to their requirements for home day care operation. My research has already revealed that these occupancies are referred to by a variety of names, including day care homes, family day care homes, group day care homes, residential day care facilities, etc. To clarify my interest, I am referring to child care services that are provided for children other than family members, primarily in residential/home settings. I am not referring to day care "centers", unless your regulations do not recognize the use of a home for day care as being any different than a "center". To complete the fact-finding/literature search portion of my research, I am writing to request information from your organization relative to this issue.

Specifically, I am interested in:

- Any literature, position papers, instructional material, or your organization's opinion/comments, relative to the issue of fire safety in home day care occupancies.

- Whether your organization, or some other organization you might be familiar with, maintains any type of database related to the number of fires that have occurred in home day care occupancies, or day care home injury information that might include fire injuries. (I have identified a problem within the NFIRS program, for reporting home day care occupancy fire incidents. The unavailability of a NFIRS "fixed property use code" specific to day care homes, has resulted in the system being unable to track fires, fire injuries or fire deaths in home day care occupancies).

- Whether your organization's building code (or any other regulations promulgated by your organization) contains criteria specific to homes that are used to conduct child care, and if so, if the criteria is more stringent than requirements that would apply to a single family residential home under the same code?

- If indeed the requirements for home day care occupancies are more stringent than any required to be followed in a single family residential occupancy, is there any quantitative justification for the more stringent requirements? (Documentation to indicate that home day care occupancies present any fire safety risks above and beyond those that would be expected in a single family home based either upon the age or number of children present in such occupancies?)

I would appreciate any literature and/or input that your organization might be able to offer relative to any of these issues.

Furthermore, I would appreciate completion of the survey form on the attached page relative to specific requirements of your code for <u>home</u> day care occupancies. (If no one is available to complete the survey, I understand and will research the code material myself to extract the answers. In such event, I would appreciate knowing if sections of the code pertaining to residential day care can be reproduced and forwarded to me, or if this would require purchase of the entire code book).

I appreciate any help that you might be able to give in this matter and look forward to hearing from you. If you require payment to cover mailing costs for any documents please inform me. I would appreciate your returning the information to me at:

Kenneth Wood, P.E.
Division of Fire Prevention
Office of the State Fire Marshal
100 West Randolph St. 11-800
Chicago, IL 60601

Understandably, attempting to fit your code's criteria/requirements into a pre-arranged survey may lead to unforeseen difficulty. Therefore, if you would prefer to either talk to me via telephone, or contact me via e-mail, appropriate contact methods are listed below.

Respectfully,

Kenneth Wood, P.E.
Fire Protection Engineer
Division of Fire Prevention

Phone: 312/814-3456 Fax: 312/814-3459

Appendix I – Survey Results and Analysis

Table I1

Fire Experience in All Housing Units vs. Home Day Care Occupancies

State	All housing units	Home day care occupancies
California		
Total occupancies	11,182,882	42,000
Fires	80,316	104
Fires/1,000 occupancies	7.18	2.47
Fire deaths	460	0
Fire deaths/1,000 occupancies	0.04	
Fire injuries	4,051	2
Fire injuries/1,000 occupancies	0.36	0.05
Fire loss ($ millions)	1,510.0	2.2
Fire loss $/occupancy	135.0	52.4
Kansas		
Total occupancies	1,044,112	9,000
Fires	18,810	21
Fires/1,000 occupancies	18.0	2.3
Fire deaths	200	1
Fire deaths/1,000 occupancies	0.19	0.11
Fire injuries	994	0
Fire injuries/1,000 occupancies	0.95	
Fire loss ($ millions)	185.1	0.16
State	All housing units	Home day care occupancies
Kansas (cont.)		
Fire loss $/occupancy	177.3	17.8
Nevada		
Total occupancies	519,000	300

Fires	-		1	
Fires/1,000 occupancies	-		3.33	
Fire deaths	-		0	
Fire deaths/1,000 occupancies	-			
Fire injuries	-		4	
Fire injuries/1,000 occupancies	-		13.33	
Fire loss ($ millions)	-		0.02	
Fire loss $/occupancy	-		66.7	
Oregon				
Total occupancies	1,193,567		10,500	
Fires	21,758		1	
Fires/1,000 occupancies	18.2		0.1	
Fire deaths	181		0	
Fire deaths/1,000 occupancies	0.15			
Fire injuries	1,071		0	
Fire injuries/1,000 occupancies	0.90			
Fire loss ($ millions)	167.1		0.002	
Fire loss $/occupancy	140.0		0.19	

Note. All fire incident data represent a total of the past five reporting years for each respective state as offered at the USFA Fire Profile website. Blank spaces represent information that is not applicable. Only some Nevada fire departments participate in the NFIRS and USFA information stated that Nevada did not report NFIRS information for the past five years. Therefore, comparison of Nevada data for all housing units vs. home day care occupancies is not possible. A "-" is used to indicate data not available. Number of housing units from 1990 U.S. Census Bureau Housing and Household Economic Statistics website. Home day care occupancy statistics from 1998 survey responses to the author's research. California, Kansas, Nevada, and Oregon were the only states that reported data relative to home day care occupancy fires.

Table I2

State Fire Authority Survey Results

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
Alabama	Y	4	12	Y	LSC	F,L	N	N	N		Y	N	Y	1995
Alaska	Y	6	12	Y	UBC	D,F,S,	Y	N	P	N	Y	-	U	1998
Arizona	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arkansas	-	-	-	-	-	-	-	-	-	-	-	-	-	-
California	Y	7	12	Y	N	L	Y	Y	Y	Y	N		Y	1994
Colorado	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Connecticut	Y	4	12	Y	N	F,L	Y	N	A	N	Y	N	Y	1997
Delaware	Y	3	12	Y	LSC	D, F[a]	Y	N	P	N	N		Y	1997

table continues

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
Florida	Y	6	12	Y	LSC	L[b]	N	N	P	N	N		Y	1992
Georgia	Y	7	12	Y	LSC	F,L	N	N	P	N	N		Y	1998
Hawaii	N					D	N	N	A	N	-	-	Y	
Idaho	Y	7	12	Y	LSC	F,L	N	N	Y	N	Y	U	Y	1985
Illinois	Y	4	16	Y	LSC	D,F[c]	N	N	Y	N	Y	Y	Y	1994
Indiana	N	6	16			D	N	N	A	N	U	U	Y	1996
Iowa	Y	1	6	Y	N	D, F,L	N	N	Y	N	Y	U	U	1992
Kansas	Y	6	12	Y	LSC	F,L, S	Y	Y	A	Y	N		U	1998
Kentucky	Y[d]	7	12	Y	LSC	D,F	Y	N	A	N	Y	Y	Y	1974
Louisiana	Y	1	12	Y	LSC[e]	F	N	N	A	N	N		U	1998

table continues

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
Maine	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maryland	Y	1	12	Y	LSC	C,F,D,S	Y	N	A	N	Y	Y[f]	Y	1995
Massachusetts	N			N		D	Y	N	A	N				
Michigan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minnesota	Y	1	14	Y	UFC	C,D,F,L	N	N	P	N	Y	N	Y	1993
Mississippi	Y[g]	6	15	Y	LSC	D,L	N	N	-	-	Y	N	Y	-
Missouri	Y	4	20	Y	LSC	F	N	N	P	N	Y	Y	Y	1998
Montana	N[h]					D	Y	N	A	N	U	U	U	1993
Nebraska	Y	3	12	Y	LSC	D,F, L[i]	N	N	A	N	Y	Y	Y	1996

table continues

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
Nevada	Y	6	10	Y	UBC	F,L	Y	Y	P	Y	Y[j]	Y	Y	-
New Hampshire	Y	4	12	Y	LSC	L[k]	N	N	A	N	Y	Y	Y	-
New Jersey	Y	1	5	Y	-	F,L[l]	N	N	P	N	N		-	-
New Mexico	Y	4	12	Y	LSC	C,F,L	Y	N	A	N	Y	Y	Y	1997
New York	Y	-	-	N	N	D,L	N	N	A	N	N	-	-	-
North Carolina	Y	3	5	Y	N	L	N	N	N		N		Y	1996
North Dakota	Y	8	17	Y	-	F, L,S	N	N	N		N		-	-
Ohio	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oklahoma	Y	1	12	Y	LSC	D, F, L	N	N	P	N	N		Y	1995
Oregon	N		12	N	-	D,L	Y	Y	Y	Y	N		Y	-

table continues

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
Pennsylvania	N				N	D	N	N	P[m]	N	U	U	U	
Rhode Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-	-	-	-	-	-	-	-	-
South Dakota	Y	-	11	N	-	F	N	N	A	N	Y	N	Y	1996
Tennessee	Y	7	15	Y	LSC	D,F,L,S	N	N	P	N	Y	N	Y	1997
Texas	Y	1	12	Y	LSC	D,F,L,S[n]	N	N	P	N	Y	N	Y	1995
Utah	Y	1	12	Y	-	C,D,L,S	N	N	P	N	N		-	1998
Vermont	Y	3[o]	12	N	LSC	-	-	-	-	-	-	-	-	-
Virginia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington	N				-	C,D,L	N	N	N[p]	N	N		Y	1995

table continues

State	Is home day care regulated ?	Min. # of children to be regulated	Max. # of children allowed in home day care	Fire criteria more stringent than single-family home?	Model code applicable ?	Who conducts home day care fire inspections?	Are home day care client injuries reported to OSFM?	Are data available for home day care fires ?	Does state participate in NFIRS?	Has NFIRS been modified to recognize home day care?	Can overnight care be provided ?	If overnight care allowed, can all staff sleep ?	Min. # of staff required ?	Date of latest applicable fire safety rules
West Virginia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wisconsin	N[q]	-	-	-	-	-	-	-	-	-	-	-	-	-
Wyoming	Y	6	12	Y	UFC	F,S	N	N	A	N	N		Y	-

Note. Data are from 1998 survey of state fire authorities by author. In reference to who conducts home day care fire inspections: C = county or local child care licensing agencies. D = state day care licensing authorities. F = state fire authorities. L = local fire departments. S = self inspection conducted by the day care home owner. See Table I4 for data from states indicating a positive response to the questions pertaining to the existence of home day care occupancy fire incident data. In reference to whether a state participates in the NFIRS: A = all fire departments are required to participate. P = partial participation by some of the fire departments in the state. N = No, the state does not participate. A "U" entry in the table = Survey question was answered "unknown". A "-" indicates unreported data. Blank spaces represent information that is not applicable.

table continues

a. The Delaware OSFM conducts inspections only by special request of the state's child care licensing agency. Not all day care homes are inspected. b. The Florida OSFM establishes fire safety rules, but local fire departments conduct inspections. c. Illinois DCFS conducts 98% of home day care occupancy inspections. Illinois OSFM inspects only group day care homes. d. In Kentucky, only group home day care occupancies serving 7 to 12 children are regulated and inspected by the OSFM. e. In Louisiana, the LSC applies to homes with seven or more clients. Homes serving less than seven clients are subject to other state rules not based upon a model code. f. In Maryland, all staff can sleep if five or less clients are present. g. In Mississippi, six or less clients constitutes a family child care home and registration is voluntary. More than 6 clients constitutes a group day care home and licensing is mandatory. h. The Montana OSFM conducts home day care inspections only if more than 13 clients are present, and then day care center rules are applied. i. The Nebraska OSFM or a local fire department conduct only the initial home day care occupancy inspection. Thereafter, child care licensing authorities conduct inspections. j. Clients are allowed to sleep overnight in Nevada if the home is protected by an automatic sprinkler system and fire alarm system. k. The New Hampshire OSFM conducts home day care occupancy inspections only when requested by the local fire department. l. The New Jersey OSFM conducts home day care occupancy inspections if six or more children receive care. m. Some Pennsylvania fire departments participate in the NFIRS, however statistics are not collected by the state agency. n. The Texas OSFM conducts home day care occupancy inspections only when no local jurisdiction exists. o. Vermont regulates home day care occupancies if serving more than 12 children, or if the children present are from three different families. p. Washington will begin to participate in the NFIRS 5.0 program as of January 1999. q. Wisconsin's OSFM survey was returned blank other than instructions to contact the Department of Human Services.

Table I3

State Child Care Licensing Agency Survey Results

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff sleep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
Alabama	Y	1	12	Y	-	D	Y	N	Y	Y	Y	U	1988
Alaska	Y	5	8	Y	U	D,F	Y	N	Y	Y	Y	Y	1998
Arizona	-	-	-	-	-	-	-	-	-	-	-	-	-
Arkansas	Y	6	16	Y	LSC	L	Y	N	Y	Y	Y	N	1998
California	Y	1	14	Y	N	F,L	N	N	Y	Y	Y	S	N/A
Colorado	Y	1	12	Y	-	-	Y	N	Y	Y	Y	N[a]	1996
Connecticut	Y	1	9	-	N	D	Y	N	Y	Y	Y	N	-
Delaware	Y	1	8	Y	N	D	Y	N	Y	Y	Y	N	-

table continues

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff sleep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
Florida	Y	3	10	Y	N	F,L	Y	N	Y	Y	Y	Y	-
Georgia	Y	3	8	Y	N	D	Y	N	Y	N	Y	N	1995
Hawaii	-	-	-	-	-	-	-	-	-	-	-	-	-
Idaho	Y	7	12	N	-	L	N	-	Y	Y	N	N	1997
Illinois	-	-	-	-	-	-	-	-	-	-	-	-	-
Indiana	Y	6	16	Y	N	C,D,F,L	Y	N	Y	Y	Y	N	1996
Iowa	-	-	-	-	-	-	-	-	-	-	-	-	-
Kansas	Y[b]	1	12	Y	LSC	D,S[c]	N[d]	N	Y	Y	Y	Y	1997
Kentucky	N[e]	-	-	-	-	-	-	-	-	-	-	-	-
Louisiana	-	-	-	-	-	-	-	-	-	-	-	-	-

table continues

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff sleep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
Maine	Y	3	12	Y	LSC	F,L	N	N	Y	N	Y	Y	U
Maryland	Y	1	8	Y	-	F, L	Y	N	Y	N	Y	Y	N/A
Massachusetts	Y	1	10	Y	N	D	Y	N	Y	Y	Y	N	-
Michigan	Y	1	12	Y	N	D	Y	N	Y	Y	Y	N	1989
Minnesota	Y	1	14	N	-	C,F[f]	Y	N	Y	Y[g]	Y	N	U
Mississippi	Y	6	-	Y	LSC	L	Y	N	Y	N	Y	N	1997
Missouri	Y	5	10	Y	LSC	F, L	Y	N	Y	Y	Y	N	-
Montana	Y	3	12	Y	N	F,S[h]	Y	N	Y	Y	Y	N	1997
Nebraska	Y	4	10	Y	LSC	C,D	Y	N	Y	Y	Y	Y	1995
Nevada	Y	5	12	Y	N	F	Y	N	Y	Y	Y	Y	1998

table continues

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff sleep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
New Hampshire	Y	4	17	Y	-	F,L,	N	N	Y	Y	Y	Y	1998
New Jersey	Y	1	5	Y	N	C[i]	Y	N	Y	Y	Y	N	1995
New Mexico	Y	5	12	Y	N	D, F	Y	N	Y	Y	Y	N	U
New York	Y	3	12	Y	N	C,D,S	Y	N	Y	Y	Y	N	1998
North Carolina	-	-	-	-	-	-	-	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-	-	-	-	-	-	-	-
Ohio	-	-	-	-	-	-	-	-	-	-	-	-	-
Oklahoma	Y	1	12	Y	LSC	D[j]	Y	N	Y	Y	Y	N	1993
Oregon	Y	3	10	Y	U	F,S	Y	N	N		Y	N	1996
Pennsylvania	Y	4	12	Y	N	F,L	Y	N	Y	Y[k]	Y	-	-

table continues

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff seep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
Rhode Island	Y[l]	9	12	Y	LSC	F	N	N	Y	Y	Y	N[m]	1990
South Carolina	Y	2	12	Y	N	F	Y	N	Y	N	Y	N	U
South Dakota	Y	13	20	Y	-	C,D,L	N	N	Y	Y[n]	Y	N	1995
Tennessee	Y	5	15	Y	LSC	D, F	N	N	Y	N	Y	Y	1997
Texas	-	-	-	-	-	-	-	-	-	-	-	-	-
Utah	Y	5	16	Y		L,D[o]	Y	N	Y	Y	Y	Y	1998
Vermont	Y	3[p]	12	Y	N	D,L	N	N	Y	Y	Y	N	1996
Virginia	Y	6	12	Y	N	D,S	Y	N	Y	Y	Y	N	1993
Washington	Y	1	12	Y	UBC	D	Y	N	Y	Y[q]	Y	N	1994
West Virginia	-	-	-	-	-	-	-	-	-	-	-	-	-

table continues

State	Is home day care regulated?	Min. # of children to be regulated	Max. # of children allowed in day care home	Fire criteria more stringent than single-family home?	Model code applicable?	Who conducts home day care fire inspections?	Are home day care client injuries reported to agency?	Are data available for home day care fires?	Can overnight care be provided?	If overnight care allowed, can all staff sleep?	Min. # of staff required?	Are locations of home day care occupancies given to OSFM?	Date of latest applicable fire safety rules
Wisconsin	Y	4	8	Y	N	D,S	Y	N	Y	N	Y	N	1989
Wyoming	-	-	-	-	-	-	-	-	-	-	-	-	-

Note. Data are from 1998 survey of state child care licensing authorities by author. In reference to who conducts home day care fire inspections: C = county or local child care licensing agencies. D = state day care licensing authorities. F = state fire authorities. L = local fire departments. S = self inspection conducted by the day care home owner. U = question was answered "unknown". A "-" indicates unreported data. Blank spaces represent information that is not applicable.

a. In California, only the locations of larger day care homes are given to fire authorities to conduct inspections. b. Kansas regulates all day care homes, but inspections are not conducted unless the home serves more than seven children. c. In Kansas, the state child care licensing agency contracts with local health departments to conduct inspections. Home owners must also conduct self-inspections. State fire authorities inspect only upon specific complaint. d. Kansas does not currently require fire

table continues

injuries to be reported. This will be required in forthcoming rule revisions. e. Kentucky's response indicated that all fire safety issues are deferred to the state fire authority. f. In Minnesota, home day care occupancies are licensed and inspected by county agencies unless 10 or more children are present or children are located in basements or mobile homes. g. Minnesota rules require staff to be able to interact in an emergency, but they are not specifically prohibited from sleeping. h. Montana practices self-certification by the home day care occupancy owner. Only 20% of day care homes are inspected by the state fire authority each year. i. In New Jersey, the sponsoring day care organization in the county conducts the inspection. This is not necessarily a public or county agency. j. In Oklahoma the state child care licensing agency regularly inspects day care homes. The state fire authority is requested only if a specific problem exists. k. Pennsylvania allows staff sleeping practices to be decided by mutual decision of the home day care operator and parents. l. Rhode Island regulates group day care homes serving from 9 to 12 children. Family day care homes serving up to and including 8 children are not regulated. m. Rhode Island supplies the locations of licensed day care homes, but not registered day care homes. Therefore, the vast majority of home locations are not supplied. n. South Dakota regulations allow staff to sleep if 12 or fewer children are present. o. Utah allows local fire departments to conduct the initial fire safety inspection of a day care home. The state child care licensing agency conducts subsequent inspections. p. Vermont rules are effective if children from more than two families receive care in a home day care occupancy. Therefore, a minimum of three children must be present for regulations to apply. q. At the time of the survey – May 1998 – Washington allowed all staff to sleep when children were asleep. This is currently in the process of being changed to not allow all staff to sleep.

Table I4

State Fire Safety Criteria

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
Alabama	Y	A.C.	N	N	Y	Y	Y	LSC	G,2,B,GAR	Y	N
Alaska	Y	Either	N	N	Y	Y	N	UBC	G,2,B,	Y	Y
Arizona	-	-	-	-	-	-	-	-	-	-	-
Arkansas	Y	A.C.	N	N	Y			N	G, GAR	Y	Y
California	Y	Either	N	N	Y			N	G	Y	N
Colorado	Y	Either	N	N	Y	N	N		G,2, B	Y	Y
Connecticut	Y	Either	N	N	Y	Y	N	N	G,2,B,GAR	Y	Y
Delaware	Y	Either	N	N	Y	Y	N	LSC	G,B[a]	Y	Y

table continues

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
Florida	Y	Either	N	N	N	Y	Y	LSC	G,2,B,GAR	Y	Y
Georgia	Y	Either	N	N	Y			-	G, GAR	Y	Y
Hawaii	Y	Either	N	N	Y	Y	N	N	G	N	Y
Idaho	Y	Either	N	N	Y			N	G	Y	N
Illinois	Y	Either	N	N	Y	Y	Y	LSC	G,2,B	Y	Y
Indiana	Y	A.C.[b]	Y[c]	Y[d]	Y	Y	Y	N	G, 2, B [e]	Y	Y
Iowa	Y	A.C.	Y	Y	Y	N	Y	-	G, 2,B, GAR[f]	Y[g]	Y
Kansas	Y	Either	N	N	Y	Y	Y	N	G, 2,B, GAR[h]	Y	Y
Kentucky	Y	A.C.	N	N	Y	Y	Y	LSC	G,B	Y	Y
Louisiana	Y	Either	N	N	Y	Y	N	LSC[i]	G,2,B,GAR	Y	N

table continues

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
Maine	Y	Either	Y	N	Y	Y	N	LSC	G,2,B,GAR	Y	Y
Maryland	Y	Either	N	N	Y	Y	Y	N	G,2, B	Y	Y
Massachusetts	Y	Either	N	N	Y	Y	Y	LSC	G,2,B	Y	Y
Michigan	Y	Either	N	N	Y	Y	N	N	G,2,B	Y	Y
Minnesota	Y	Either	N	N	Y	Y	N	UFC	G,2, B	N	Y
Mississippi	Y	Either	N	N	Y	Y	Y	LSC	G	Y	Y
Missouri	Y	Either	N	N[j]	Y	Y	Y	LSC	G,2, B	Y	Y
Montana	Y	Either	N	N	Y	Y	N	N	G,2	Y	N
Nebraska	Y	Either	N	N	N	Y	Y	LSC	G, 2, B	Y	Y
Nevada	Y	A.C.	Y[k]	Y[l]	Y	Y[m]	Y	N	G,2,B	N	Y

table continues

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
New Hampshire	Y	A.C	N	N	Y	Y	Y	LSC	G,2	Y	Y
New Jersey	Y	Either	N	N	N	N	N	N	G,2,B,GAR	Y	N
New Mexico	Y	Either	N	Y	Y	Y	Y	LSC	G,2,	Y	Y
New York	Y	Either	N	N	Y	Y	N	N	G,2,B,GAR	Y	Y
North Carolina	Y	A.C.	N	N	Y			N	G	N	Y
North Dakota	Y	Either	N	N	Y	Y	N	-	G, 2, B	N	Y
Ohio	-	-	-	-	-	-	-	-	-	-	-
Oklahoma	Y	A.C.	N	N	Y	Y	N	LSC	G	Y	Y
Oregon	Y	Either	N	Y	Y	Y	N	N	G,2,B,GAR	Y	Y
Pennsylvania	N[n]	N/A	N	N	Y	N	N	N	G,2,B,GAR	Y	Y

table continues

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
Rhode Island	Y	Either	N	N	Y	Y	Y	LSC	G,2,B,GAR	Y	Y
South Carolina	-	-	-	-	-	-	-	-	-	-	-
South Dakota	Y	Either	Y	Y[o]	Y	Y	Y	N	G, 2, B,	Y[p]	Y
Tennessee	Y	A.C.	N	N	Y	Y	Y	LSC	G,B,GAR	Y	Y
Texas	Y	Either	N	N	Y			LSC	G,2,GAR	Y	Y
Utah	Y	Either	N	N	Y	Y	Y	LSC, UBC	G, 2, B[q]	Y	Y
Vermont	Y	Either	N	N	Y	Y	N	N	G, 2, B	Y	Y
Virginia	Y	Either	N	N	Y	Y	N	N	G,2,B,GAR	Y	Y
Washington	Y	Either	N	N	Y	Y	Y	N	G,2,B	Y	Y
West Virginia	-	-	-	-	-	-	-	-	-	-	-

table continues

State	Smoke detectors required?	Smoke detectors battery or A.C.?	Exit signs required?	Emergency lighting required?	Fire extinguishers required?	Two means of escape from basement required?	Direct exit from basement required?	Model code adopted?	On what levels can a day care home be located?	Day care home allowed in apartment buildings?	Fire exit drills required?
Wisconsin	Y	Either	N	N	Y	Y	N	N	G,2,B	Y	Y
Wyoming	Y	Either	N	N	Y			UBC	G	Y	Y

Note. Results taken from the most stringent criteria reported by either the fire authority or child care licensing agency of each responding state. A.C. = Alternating current. LSC = Life Safety Code. UBC = Uniform Building Code. G = Ground floor. B = Basement. 2 = 2nd floor. Gar = Garage. A "-" is used to represent unreported data. Blank spaces represent information that is not applicable.

a. Delaware allows day care homes within apartment buildings only if located on the ground floor. b. Indiana allows battery operated smoke detectors in day care homes serving up to 12 clients. Homes serving more than 12 clients must be equipped with A.C. powered smoke detectors. c. Indiana requires exit signs in day care homes serving more than 12 clients. d. Indiana requires emergency lighting in day care homes serving more than 12 clients. e. Indiana imposes more stringent exiting requirements if more than 12 clients are located in a basement or on the 2nd floor. f. Iowa allows basement and 2nd floor occupancy dependent upon construction features of the

table continues

home. g. Iowa requires day care home occupancies within apartment buildings to be separated from other areas of the building by 1-hour fire rated construction. h. Kansas allows use of a garage area only if used solely for child care, and not as a garage. i. Louisiana applies the LSC if more than seven children are present. Louisiana state code applies to facilities serving seven or less children. j. Missouri requires emergency lighting to be provided if the day care home operates later than 9:00 p.m. k. Nevada requires exit signs in day care homes serving 10 or more children. l. Nevada requires emergency lighting in day care homes serving 10 or more children. m. Nevada requires two means of escape from a basement in day care homes serving 10 or more children. n. Pennsylvania requires smoke detectors to be provided for group day care homes but not family day care homes. o. South Dakota requires emergency lighting to be provided at second window exits from day care homes. p. South Dakota allows day care homes to be located in apartment buildings only if two exits are provided from within the apartment. q. Utah allows the ground floor to be used for any occupants, however 2nd floor and basement occupancy is prohibited for infants.